SERVICE MANUAL

FISHER

DOUBLE REVERSE STEREO
CASSETTE DECK

CR-W891

(EUROPE)

142 439 07

This service manual is prepared for Model CR-W891. As only the components in the chart below differ, refer to the service manual CR-W890 (WM-17155) for other components.

Ref.No.	CR-W890	CR-W891	Description	Q'ty
	PACKAGE			
	141-6-1419-86301	141-6-1419-86307	Individual Carton	1
	ACCESSORIES			
	142-6-4119-32988	142-6-4119-33413	Instruction Booklet	1
	CABINET			
1	131-2-1601-85202	131-2-1601-85208	Knob Power	1
12	141-0-1129-20400	141-0-1129-20401	Cabinet Front Assy	1
14	141-0-1319-00800	141-0-1319-00802	Clear Lid Assy Left	1
15	141-0-1319-00801	141-0-1319-00803	Clear Lid Assy Right	1
36	141-2-1219-37101	141-2-1219-37103	Rear Panel	1

Add this sheet Model CR-W890 Service Manual (WM-17155).

REFERENCE No. WM-19850

Printed in Japan
March/'87/2,000/K

SERVICE MANUAL

FISHER

CR-W890

Double Reverse Stereo Cassette Deck

(EUROPE)

FISHER
DOUBLE REVERSE STEREO CASSETTE DECK
AUTO REVERSE
AUTO REVERSE

142 439 05

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SPECIFICATIONS

CASSETTE DECK		CR-W890
Motor		(3) DC Governor
Cassette Loading		(2) Front
Drive System		(4) Capstan
Number of Heads		3
Head Material		Hard Permalloy / Ferrite
Operation		(2) Full Logic Mechanism
High Speed Dubbing		Yes
Wow & Flutter		0.06 % WRMS
Signal-to-Noise Ratio (CCIR Weighted)	Dolby NR OFF	52 dB
	Dolby NR ON B	62 dB
	Dolby NR ON C	72 dB
Erase Ratio		70 dB
Channel Separation		40 dB
Signal Crosstalk		70 dB
Frequency Response 1-7/8 IPS	Normal Tape (±3 dB)	40 Hz – 13 kHz
	CrO2 Equivalent Tape (±3 dB)	40 Hz – 14 kHz
	Metal Tape (±3 dB)	40 Hz – 15 kHz
Total Harmonic Distortion	at 0 VU	1.2 %
Fast-Forward / Rewind Time	(C-60)	110 sec.
Level Indicators		FL Meters
Inputs (Sensitivity / Impedance)		(2) Line 100 mV / 50 kΩ
Outputs (Level at 0 VU / Impedance)		(2) Line 500 mV / 2.2 kΩ
Auto Tape Select		Normal, CrO2, Metal
Tape Counter		Digital
GENERAL Power Requirements		AC 110 / 220 V (50Hz)
Power Consumption		27 Watts
Dimensions (W x H x D)		440 x 120 x 285 mm
Weight (approx.)		6.2 kg

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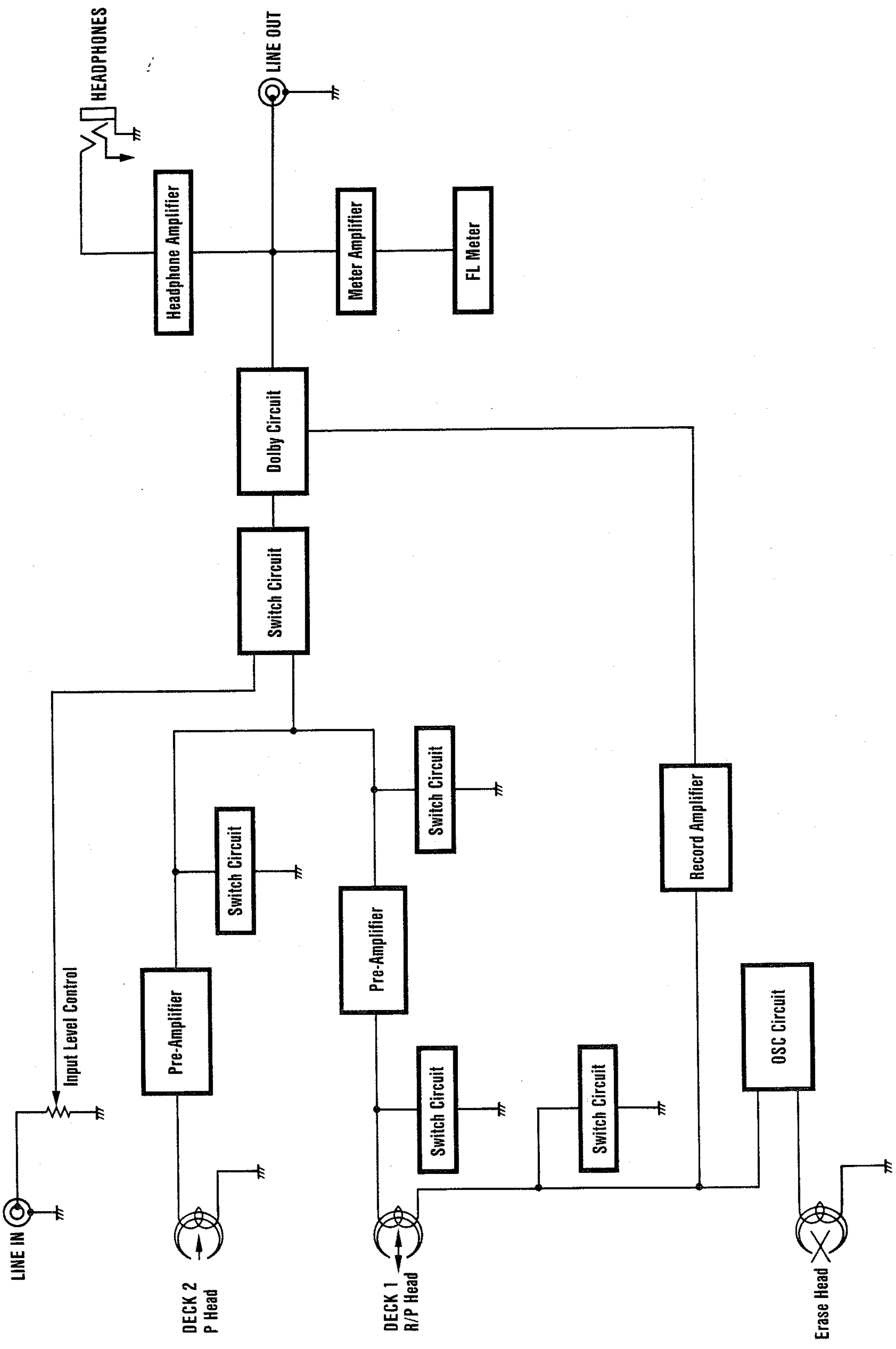
FUNCTIONAL BLOCK DIAGRAM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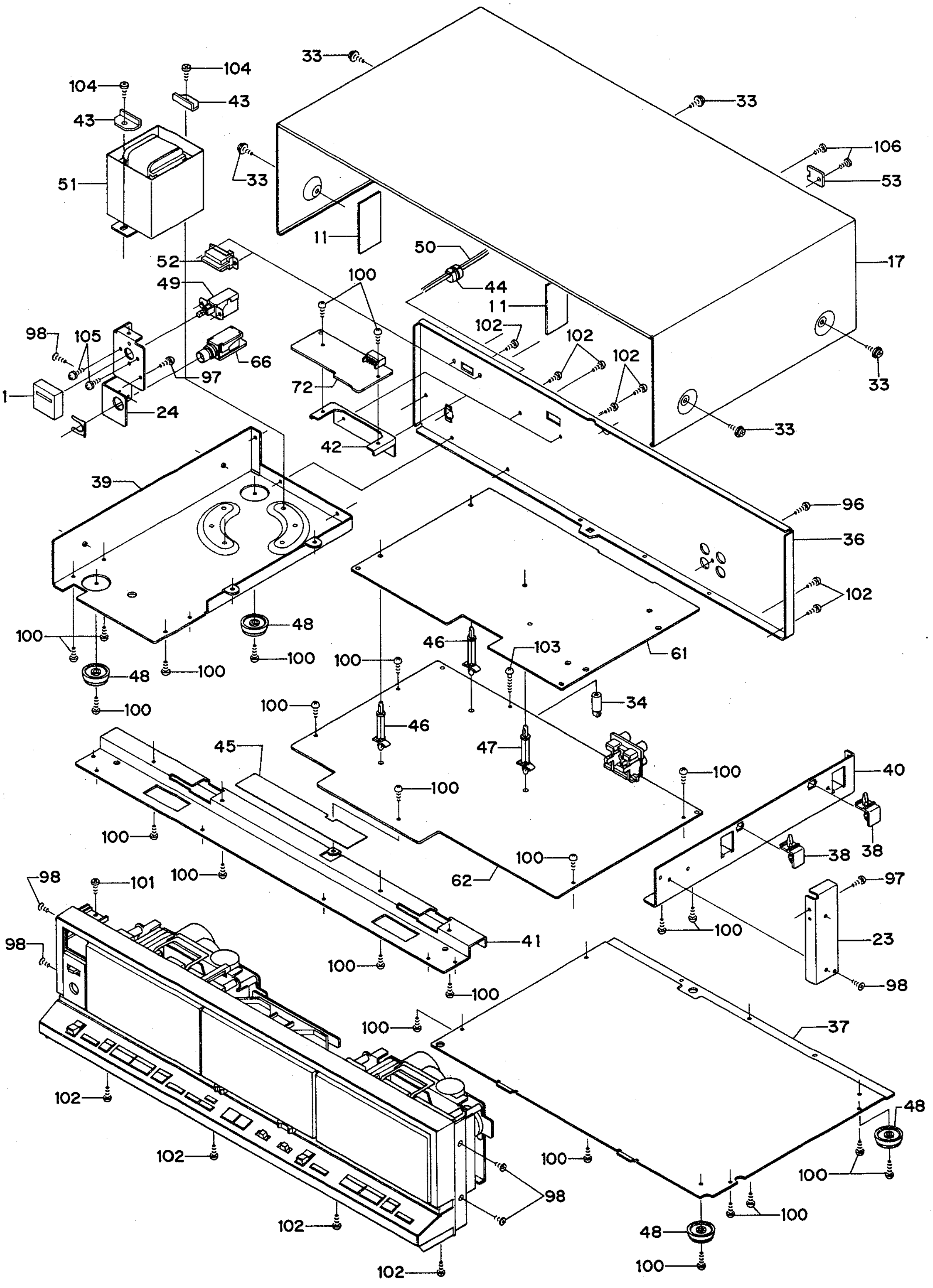
LINE OUT
Headphone Amplifier
Meter Amplifier
FL Meter
Dolby Circuit
Switch Circuit
Switch Circuit
Switch Circuit
Record Amplifier
Pre-Amplifier
Pre-Amplifier
Input Level Control
Switch Circuit
Switch Circuit
OSC Circuit
LINE IN
DECK 2
P Head
DECK 1
R/P Head
Erase Head

CABINET & CHASSIS EXPLODED VIEW



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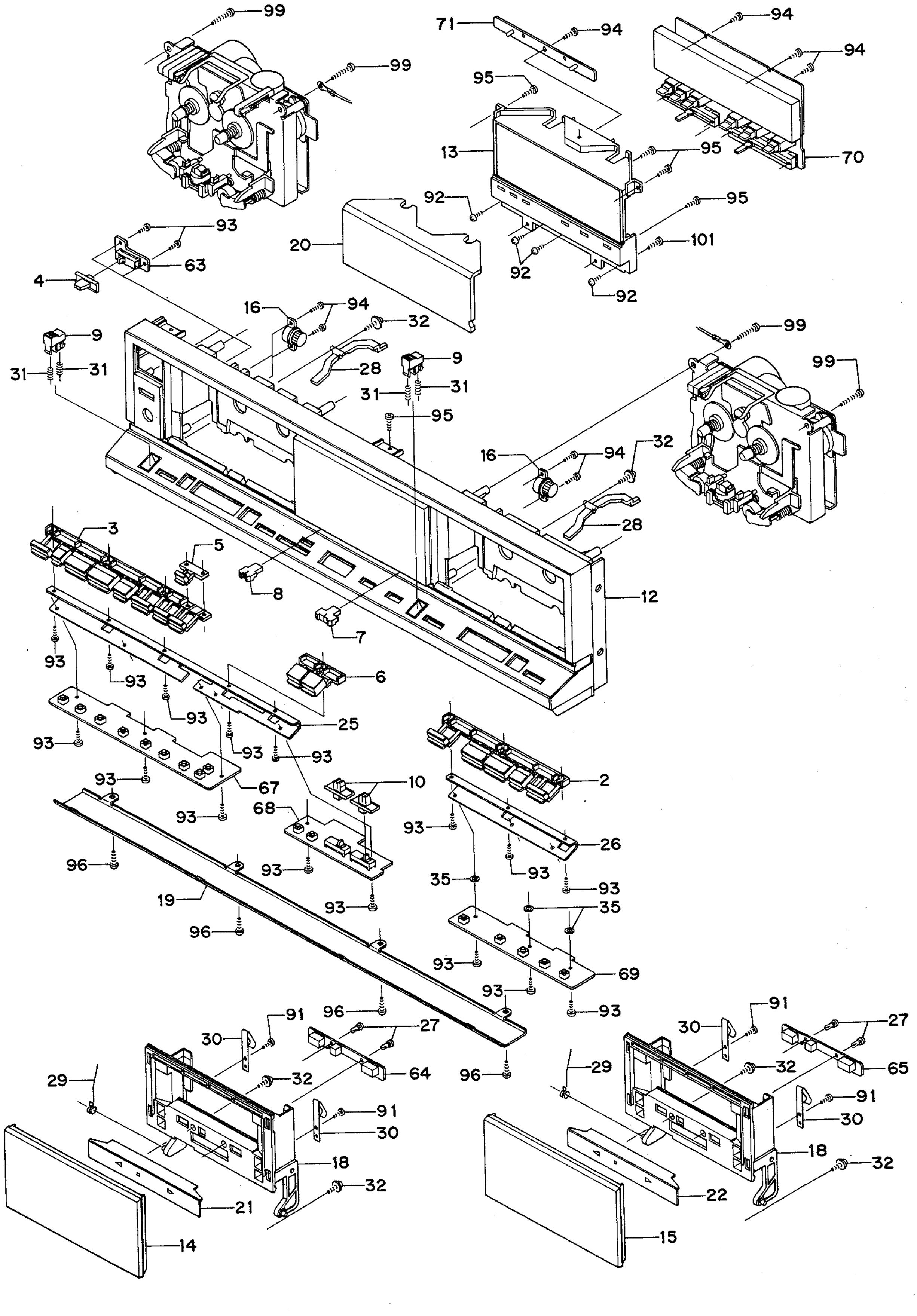
CABINET & CHASSIS EXPLODED VIEW (Continued)



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CABINET & CHASSIS PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

Ref. No.	Part No.	Description	Q'ty
	PACKAGE		
	131-6-3069-16350	Patching Sheet	1
	141-6-1419-86301	Individual Carton	1
	141-6-1469-05100	Pad Top	1
	141-6-1469-13500	Pad Left	1
	141-6-1469-13600	Pad Right	1
	141-6-2519-22290	Sheet Polyethylene	1
	ACCESSORY		
	4-2359-78767	Connector 5P Assy	1
	131-0-4004-15200	Wire Shield Assy	1
	131-0-4004-15201	Wire Shield Assy	1
	131-2-7103-51302	Label (Lid)	2
	131-6-2719-10401	Bag Fan	1
	141-6-4729-07700	Lavel Caution	1
	142-6-4119-32988	Instruction Booklet	1
	CABINET		
	141-2-4469-56700	Cushion (Rear Panel)	1
	⚠ 4-2379-70110	Solderless Terminal	3
	141-2-4359-22500	Cover Capacitor	1
	141-2-4729-07100	Wire Band	15
	⚠ 4-2239-70970	Capacitor 0.01μF 400V [C1]	1
1	131-2-1601-85202	Knob Power	1
2	141-0-1649-02400	Knob Function Assy Right	1
3	141-0-1649-02500	Knob Function Assy Left	1
4	141-2-1649-36400	Knob Slide Switch	1
5	141-2-1649-42200	Knob Reset	1
6	141-2-1649-42300	Knob Dubbing	1
7	141-2-1649-43300	Knob Volume	1
8	141-2-1649-43400	Knob Balance	1
9	141-2-1649-43500	Knob Eject	2
10	141-2-1649-43600	Knob Slide Switch	2
11	131-2-3202-14200	Metal Reinf	2
12	141-0-1129-20400	Cabinet Front Assy	1
13	141-0-1149-15100	Panel Holder Assy	1
14	141-0-1319-00800	Clear Lid Assy Left	1
15	141-0-1319-00801	Clear Lid Assy Right	1
16	141-0-5519-07903	Gear Eject Assy	2
17	141-2-1129-42400	Cover	1
18	141-2-1249-54100	Lid Cassette	2
19	141-2-1259-10100	Cover Cabinet	1
20	141-2-1329-16206	Clear Decoration	1
21	141-2-1519-50100	Decoration Lid Left	1
22	141-2-1519-50101	Decoration Lid Right	1
23	141-2-3169-30800	Bracket Support Right	1
24	141-2-3169-30900	Bracket Power Left	1
25	141-2-3169-31000	Metal Mount Left	1
26	141-2-3169-31100	Metal Mount Right	1
27	141-2-3779-21500	Nylon Rivet	4
28	141-2-7429-01900	Lever Eject	2

Ref. No.	Part No.	Description	Q'ty
29	141-2-8529-36800	Spring Cassette-up	2
30	141-2-8539-57900	Spring Cassette Hold	4
31	141-2-8559-01500	Spring Friction Sens	4
32	141-2-4219-11600	Screw	7
33	141-2-4219-33101	Screw, Bind Hd. Tapping-B, +M3.0x8	5
34	131-2-3614-21800	Mount P.C.B.	1
35	131-2-4203-17200	Washer	3
36	141-2-1219-37101	Rear Panel	1
37	141-2-1259-10000	Cover Bottom	1
38	141-2-2519-06300	Hinge	2
39	141-2-3119-28200	Chassis Cabinet	1
40	141-2-3159-04500	Panel Side Right	1
41	141-2-3159-04600	Support Angle Mecha	1
42	141-2-3519-71800	Bracket PCB	1
43	141-2-3719-05500	Fix Trans	2
44	131-2-6111-14200	Bushing	1
45	141-2-4359-41000	Insulator PCB	1
46	141-2-7539-77100	Pole	2
47	141-2-7539-86400	Pole	1
48	131-2-1801-12900	Leg	4
49	⚠ 4-2312-05030	Switch Push Power [SW31]	1
50	⚠ 4-2432-00500	Power Cord	1
51	⚠ 4-2519-74221	Power Trans [T1]	1
52	⚠ 4-2312-01020	Switch Slide (Voltage Select) [SW32]	1
53	131-2-7104 00500	Plate Pad Switch	1
61	141-0-1939-15831	Audio P.C.B. Assy	1
62	141-0-1939-15821	Control P.C.B. Assy	1
63	141-0-1939-15740	Timer P.C.B. Assy	1
64	141-0-1939-15750	Direction LED 1 P.C.B. Assy	1
65	141-0-1939-15760	Direction LED 2 P.C.B. Assy	1
66	141-0-1939-15770	Headphone P.C.B. Assy	1
67	141-0-1939-15780	Function Switch 1 P.C.B. Assy	1
68	141-0-1939-15790	Function Switch 2 P.C.B. Assy	1
69	141-0-1939-15800	Function Switch 3 P.C.B. Assy	1
70	141-0-1939-15810	FL Display P.C.B. Assy	1
71	141-0-1939-15850	Lamp P.C.B. Assy	1
72	141-0-1939-16691	Sub Rimocon P.C.B. Assy	1
91	143-3-1702-00618	Screw, Bind Hd. Tapping-B, +M2.0x6	4
92	101-3-1302-00518	Screw, Pan Hd., +M2.0x5	4
93	143-3-1702-60611	Screw, Bind Hd. Tapping-B, +M2.6x6	18
94	143-3-1302-60811	Screw, Pan Hd. Tapping-B, +M2.6x8	8
95	143-3-1702-60811	Screw, Bind Hd. Tapping-B, +M2.6x8	5
96	143-3-1903-00818	Screw, Brazier Hd. Tapping-B, +M3.0x8	5
97	143-3-1903-00811	Screw, Brazier Hd. Tapping-B, +M3.0x8	2
98	143-3-1203-00811	Screw, Flat Hd. Tapping-B, +M3.0x8	6
99	143-3-1903-01611	Screw, Brazier Hd. Tapping-B, +M3.0x16	4
100	143-3-1903-00611	Screw, Brazier Hd. Tapping-B, +M3.0x6	25
101	143-3-1703-00611	Screw, Bind Hd. Tapping-B, +M3.0x6	2
102	143-3-1903-00618	Screw, Brazier Hd. Tapping-B, +M3.0x6	11

CABINET & CHASSIS PARTS LIST (Continued)

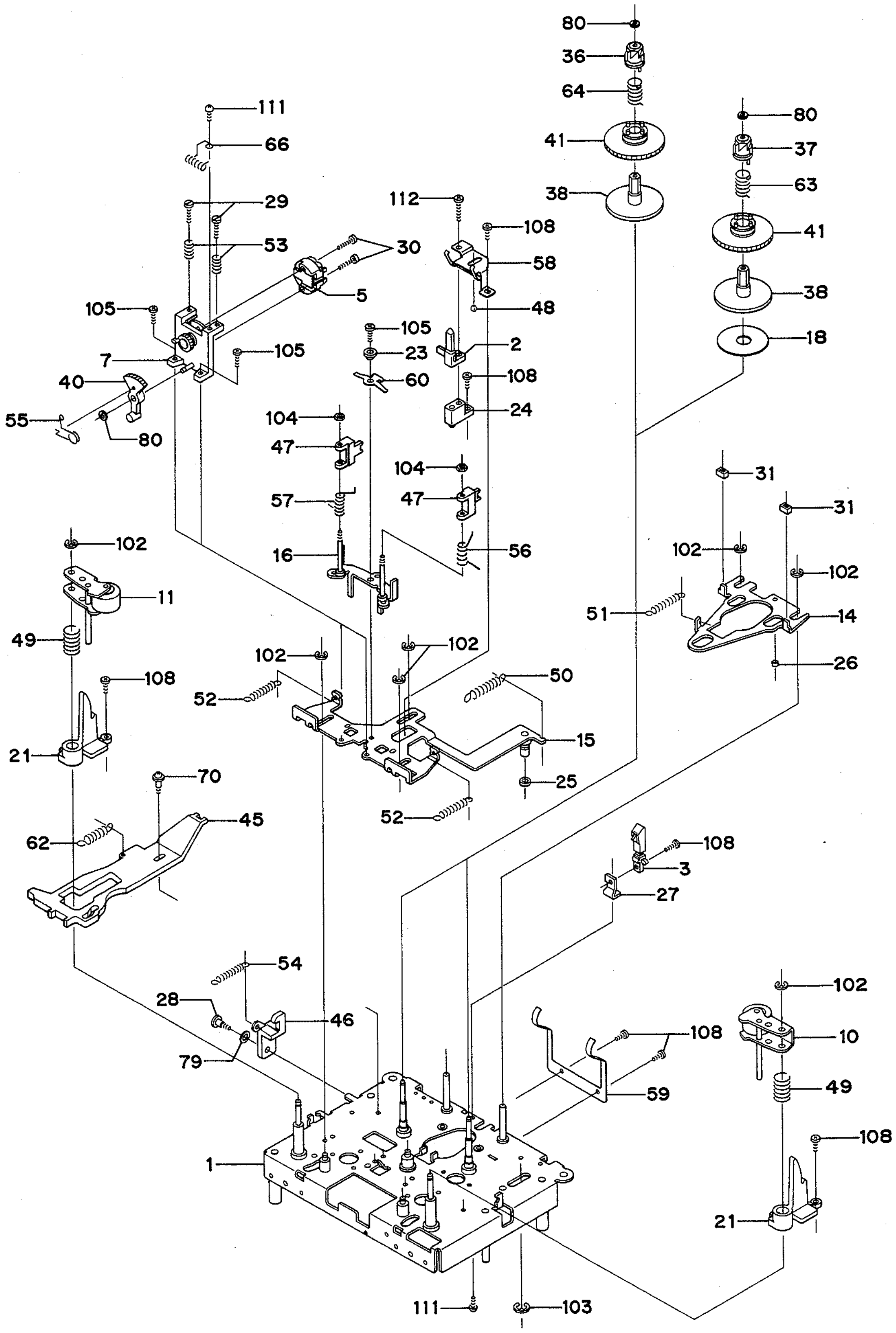
Ref. No.	Part No.	Description	Q'ty
103	143-3-1903-01811	Screw, Brazier Hd. Tapping-B, +M3.0x18	1
104	143-3-1704-00811	Screw, Bind Hd. Tapping-B, +M4.0x8	2
105	131-3-1303-00511	Screw, Pan Hd. C SW, +M3.0x5	2
106	131-3-1303-00618	Screw, Pan Hd., +M3.0x6	2

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

MECHANISM EXPLODED VIEW

(DECK 1 TOP)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MECHANISM EXPLODED VIEW
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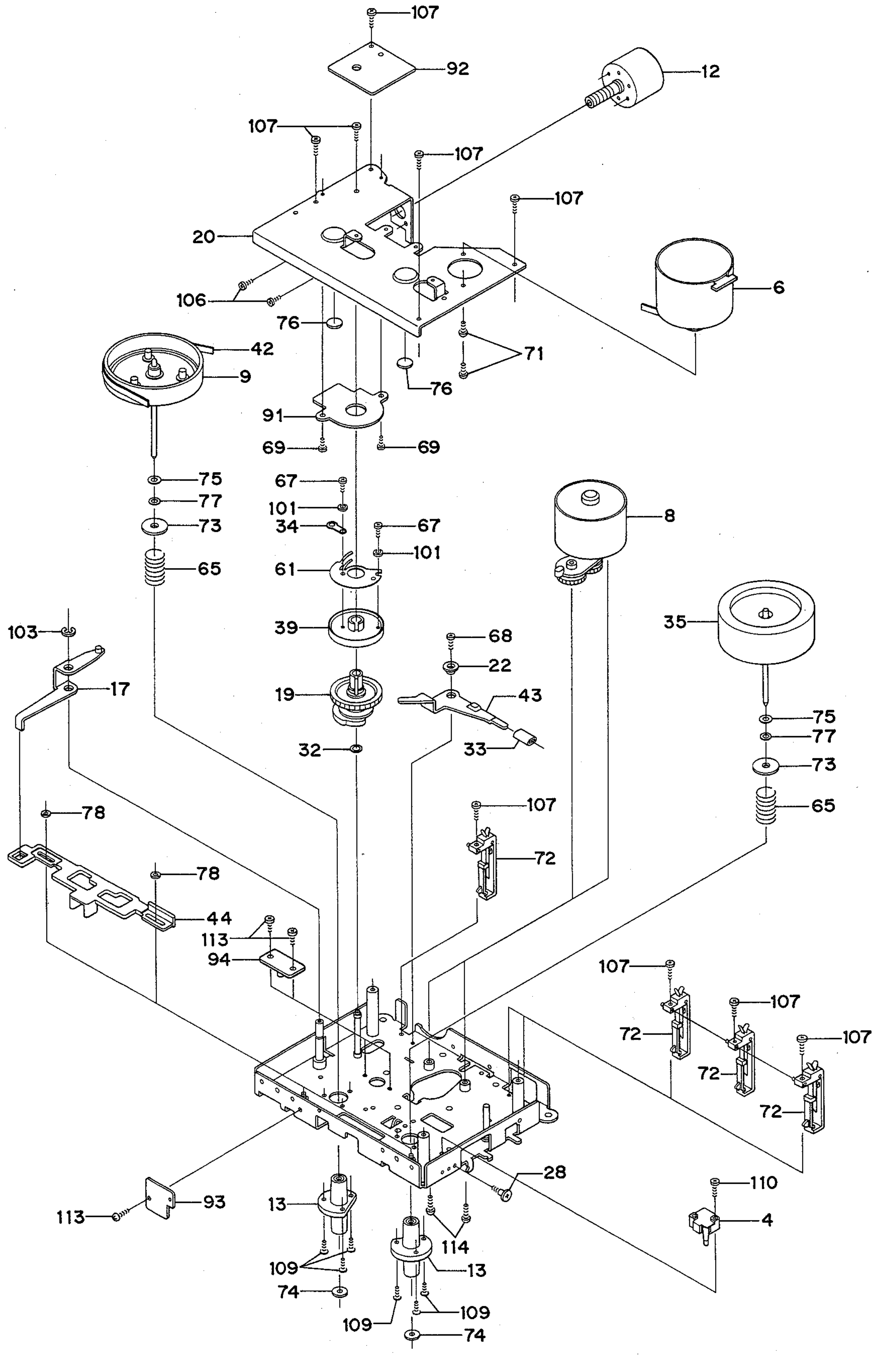
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MECHANISM PARTS LIST
(DECK 1)

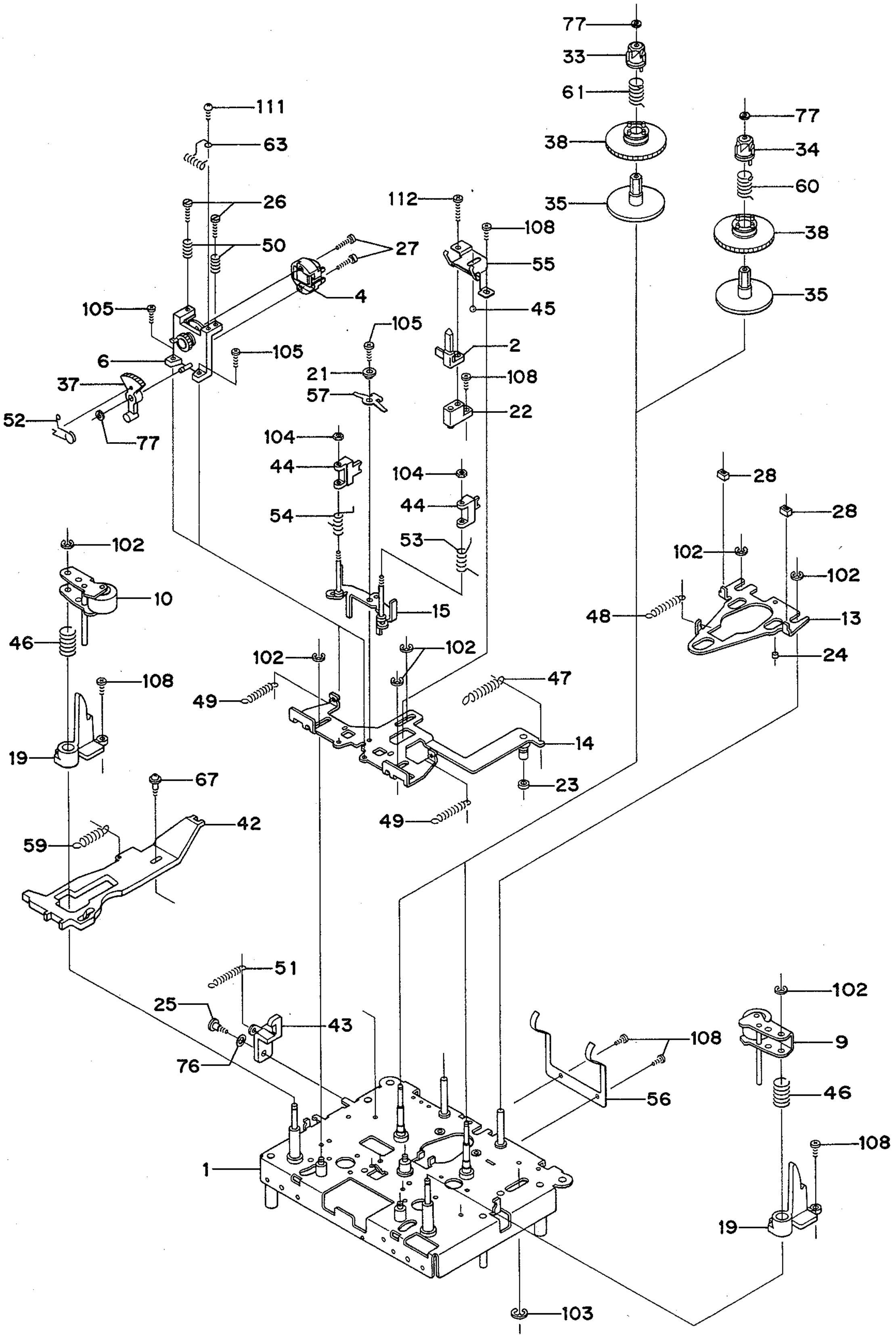
Ref. No.	Part No.	Description	Q'ty
	DECK 1 MECHANISM		
CN01	4-2359-79342	Connector 2P Assy	1
CN02	4-2359-79343	Connector 2P Assy	1
CN03	4-2359-79079	Connector 2P Assy	1
CN06	4-2359-79256	Connector 3P Assy	1
CN08	4-2359-79330	Connector 3P Assy	1
CN15	4-2359-79188	Connector 4P Assy	1
CN17	4-2359-78769	Connector 5P Assy	1
CN26	4-2359-79345	Connector 2P Assy	1
CN27	4-2359-79344	Connector 2P Assy	1
CN38	4-2359-79292	Connector 6P Assy	1
1	141-0-3119-25800	Chassis Assy	1
2	4-2039-71650	Photo Sensor SPI-306 [Q2]	1
3	4-2319-76780	Leaf Switch (Metal) [SW24]	1
4	4-2319-77060	Lever Switch (Direction) [SW21]	1
5	4-2429-73020	Rec/Play/Erase Head [HD1]	1
6	4-5279-71500	Motor (Main) [M1]	1
7	141-0-3759-01101	Head Base Comple	1
8	141-0-3799-01203	Gear Motor Compl (Reel) [M2]	1
9	141-0-5219-12200	Flywheel Assy	1
10	141-0-5459-03200	Arm Pinch Assy	1
11	141-0-5459-03201	Arm Pinch Assy	1
12	141-0-5519-10900	Motor Assist Assy (Assist) [M3]	1
13	141-0-5719-00600	Holder Capstan Assy	2
14	141-0-7149-02000	Plate Brake Assy	1
15	141-0-7319-26700	Base Slide Assy	1
16	141-0-7439-14700	Arm Tape Guide Assy	1
17	141-0-7439-14800	Arm Slide Assy	1
18	141-2-1519-50200	Reflection Gear	1
19	141-2-3169-22500	Gear Assist	1
20	141-2-3169-26500	Support Flywheel	1
21	141-2-3169-26600	Fix Cassette	2
22	141-2-3529-11700	Spacer Stop	1
23	141-2-3529-40000	Spacer Tape Guide	1
24	141-2-3529-40200	Spacer Sensor	1
25	141-2-3529-47200	Roller Base Slide	1
26	141-2-3529-53000	Spacer Tube	1
27	141-2-3659-20100	Bracket Switch	1
28	141-2-4219-14000	Screw	2
29	141-2-4219-32100	Screw Azimuth	2
30	141-2-4219-40700	Screw, Pan Hd., +M1.6x6	2
31	141-2-4459-29900	Damper Base Slide	2
32	141-2-4539-27304	Washer	1
33	141-2-4619-07900	Tube Brake	1
34	141-2-4729-07000	Lug	1
35	141-2-5219-16401	Flywheel Capstan	1
36	141-2-5319-13000	Fin Reel Supply	1
37	141-2-5319-13100	Fin Reel Take-up	1
38	141-2-5319-14500	Plate Reel	2
39	141-2-5519-53100	Disk Slide Head	1
40	141-2-5519-53300	Gear Reverse	1
41	141-2-5519-53400	Gear Reel	2
42	141-2-5619-02400	Belt Drive	1
43	141-2-7149-06300	Arm Brake	1
44	141-2-7319-67900	Plate Slide Head	1
45	141-2-7359-03300	Rod Eject	1
46	141-2-7419-97100	Lock Lid Cassette	1
47	141-2-8219-34100	Guide Tape	2
48	141-2-8259-00100	Ball	1
49	141-2-8519-02100	Spring Select Button C	2
50	141-2-8519-39300	Spring Base Slide	1
51	141-2-8519-61100	Spring Slide	1
52	141-2-8519-78600	Spring Slide Base	2
53	141-2-8519-84300	Spring Support Flywheel	2
54	141-2-8519-95100	Spring Interlock	1
55	141-2-8529-19100	Spring Gear Reverse	1
56	141-2-8529-19200	Spring Guide Tape	1
57	141-2-8529-19300	Spring Guide Tape	1
58	141-2-8539-51200	Spring Base	1
59	141-2-8539-51300	Spring Cassette	1
60	141-2-8539-51400	Spring Arm Guide	1
61	141-2-8539-55500	Switch Position	1
62	141-2-8549-00600	Spring Lever Eject	1
63	141-2-8559-07301	Spring Reel FF	1
64	141-2-8559-07500	Spring Reel REW	1
65	141-2-8559-08000	Spring	2
66	141-2-8559-09600	Spring Lug	1
67	141-2-4219-29900	Screw	2
68	141-2-4219-02900	Screw	1
69	141-2-4219-10801	Screw	2
70	141-2-4219-11400	Screw	1
71	141-2-4219-17900	Screw, Pan Hd., +M2.6x2.7	2
72	4-2319-78250	Leaf Switch (Cassette) [SW22]	1
72	4-2319-78250	Leaf Switch (CrO2) [SW23]	1
72	4-2319-78250	Leaf Switch (FWD Interlock) [SW25]	1
72	4-2319-78250	Leaf Switch (REV Interlock) [SW26]	1
73	141-2-4569-08800	Washer	2
74	141-2-4539-06900	Washer	2
75	141-2-4539-21800	Washer	2
76	141-2-4539-35400	Washer	2
77	141-2-4539-33400	Washer	2
78	141-2-4539-15700	Washer	2
79	141-2-4539-19700	Washer	1
80	141-2-4539-27800	Washer	3
91	4-2262-18621	PCB Assist	1
92	4-2262-27790	PCB Connctor 1	1
93	4-2262-28180	PCB Head 1	1
94	141-0-1939-15730	Photo P.C.B. Assy	1
101	110-3-2101-70013	Spring Washer-2, M1.7	2
102	112-3-1302-00040	E Ring, M2.0	7
103	112-3-1303-00040	E Ring, M3.0	2
104	106-3-1302-00123	Hex. Nut-3, M2.0	2
105	128-3-1317-05013	Pl Screw-3, Pan Hd., +M1.7x5.0	3
106	127-3-1217-02213	Pl Screw-1, Flat Hd., +M1.7x2.2	2
107	101-3-1702-00513	Screw, Bind Hd., +M2.0x5	9
108	101-3-1702-00411	Screw, Bind Hd., +M2.0x4	7
109	101-3-1202-00511	Screw, Flat Hd., +M2.0x5	6
110	101-3-1702-00611	Screw, Bind Hd., +M2.0x6	1
111	101-3-1302-00311	Screw, Pan Hd., +M2.0x3	2
112	101-3-1702-01411	Screw, Bind Hd., +M2.0x14	1
113	101-3-1302-00411	Screw, Pan Hd., +M2.0x4	3
114	101-3-1302-60611	Screw, Pan Hd., +M2.6x6	2

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

MECHANISM EXPLODED VIEW

(DECK 2 TOP)



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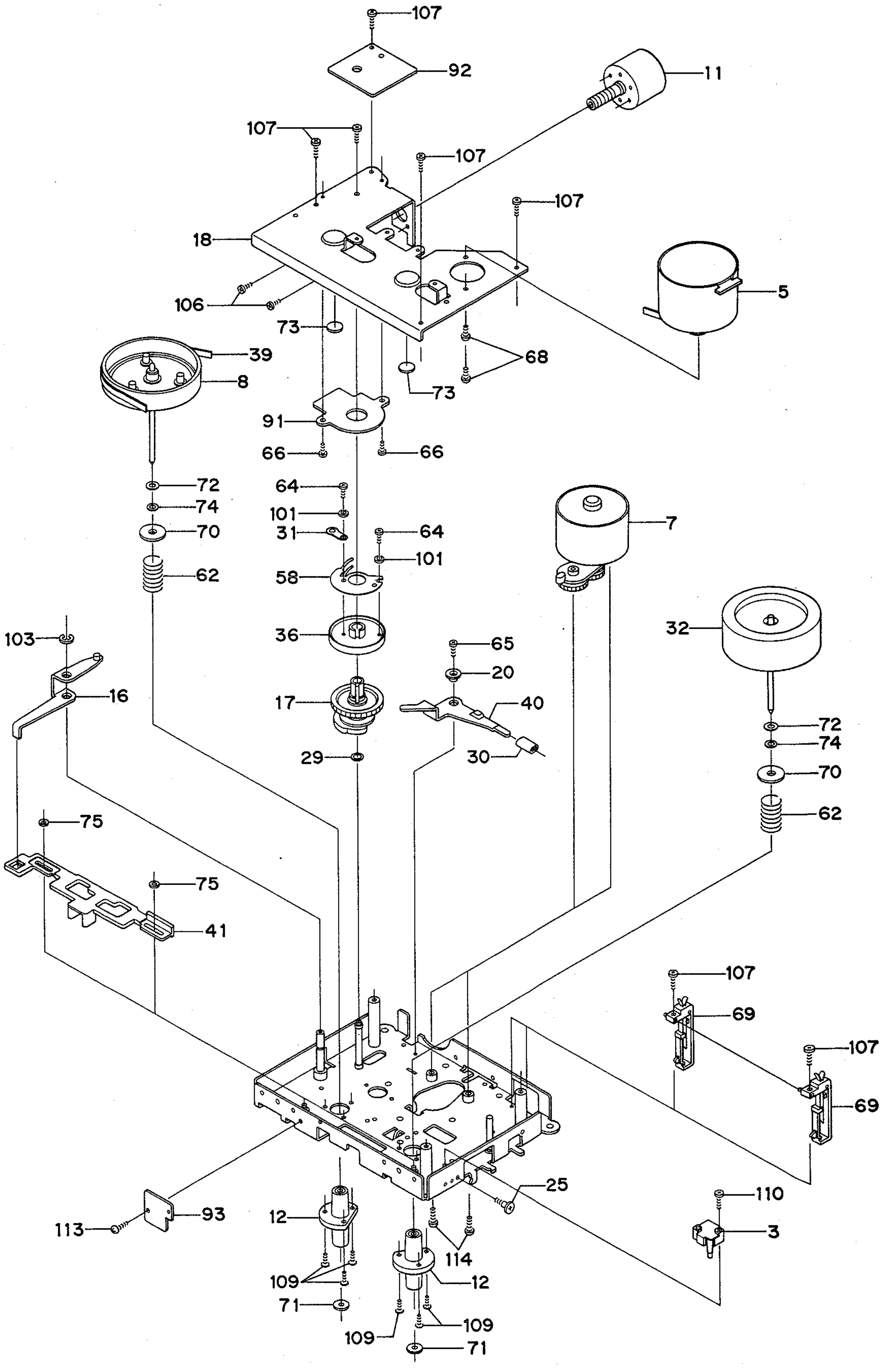
103

MECHANISM EXPLODED VIEW
(DECK 2 BOTTOM)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MECHANISM PARTS LIST

(DECK 2)

Ref. No.	Part No.	Description	Q'ty
	DECK 2 MECHANISM		
	4-2359-79313	Connector 1P Assy	1
CN04	4-2359-79343	Connector 2P Assy	1
CN05	4-2359-79342	Connector 2P Assy	1
CN07	4-2359-79256	Connector 3P Assy	1
CN09	4-2359-79330	Connector 3P Assy	1
CN12	4-2359-79187	Connector 4P Assy	1
CN16	4-2359-79189	Connector 4P Assy	1
CN29	4-2359-79331	Connector 3P Assy	1
1	141-0-3119-25800	Chassis Assy	1
2	4-2039-71650	Photo Sensor SPI-306 [Q3]	1
3	4-2319-77060	Lever Switch (Direction) [SW28]	1
4	4-2429-73010	Play Head [HD2]	1
5	4-5279-71500	Motor (Main) [M4]	1
6	141-0-3759-01101	Head Base Comple	1
7	141-0-3799-01203	Gear Motor Compl (Reel) [M5]	1
8	141-0-5219-12200	Flywheel Assy	1
9	141-0-5459-03200	Arm Pinch Assy	1
10	141-0-5459-03201	Arm Pinch Assy	1
11	141-0-5519-10900	Motor Assist Assy (Assist) [M6]	1
12	141-0-5719-00600	Holder Capstan Assy	2
13	141-0-7149-02000	Plate Brake Assy	1
14	141-0-7319-26700	Base Slide Assy	1
15	141-0-7439-14700	Arm Tape Guide Assy	1
16	141-0-7439-14800	Arm Slide Assy	1
17	141-2-3169-22500	Gear Assist	1
18	141-2-3169-26500	Support Flywheel	1
19	141-2-3169-26600	Fix Cassette	2
20	141-2-3529-11700	Spacer Stop	1
21	141-2-3529-40000	Spacer Tape Guide	1
22	141-2-3529-40200	Spacer Sensor	1
23	141-2-3529-47200	Roller Base Slide	1
24	141-2-3529-53000	Spacer Tube	1
25	141-2-4219-14000	Screw	2
26	141-2-4219-32100	Screw Azimuth	2
27	141-2-4219-40700	Screw, Pan Hd., +M1.6x6	2
28	141-2-4459-29900	Damper Base Slide	2
29	141-2-4539-27304	Washer	1
30	141-2-4619-07900	Tube Brake	1
31	141-2-4729-07000	Lug	1
32	141-2-5219-16401	Flywheel Capstan	1
33	141-2-5319-13000	Fin Reel Supply	1
34	141-2-5319-13100	Fin Reel Take-up	1
35	141-2-5319-14500	Plate Reel	2
36	141-2-5519-53100	Disk Slide Head	1
37	141-2-5519-53300	Gear Reverse	1
38	141-2-5519-53400	Gear Reel	2
39	141-2-5619-02400	Belt Drive	1
40	141-2-7149-06300	Arm Brake	1
41	141-2-7319-67900	Plate Slide Head	1
42	141-2-7359-03300	Rod Eject	1
43	141-2-7419-97100	Lock Lid Cassette	1
44	141-2-8219-34100	Guide Tape	2
45	141-2-8259-00100	Ball	1
46	141-2-8519-02100	Spring Select Button C	2
47	141-2-8519-39300	Spring Base Slide	1
48	141-2-8519-61100	Spring Slide	1
49	141-2-8519-78600	Spring Slide Base	2
50	141-2-8519-84300	Spring Support Flywheel	2
51	141-2-8519-95100	Spring Interlock	1
52	141-2-8529-19100	Spring Gear Reverse	1
53	141-2-8529-19200	Spring Guide Tape	1
54	141-2-8529-19300	Spring Guide Tape	1

Ref. No.	Part No.	Description	Q'ty
55	141-2-8539-51200	Spring Base	1
56	141-2-8539-51300	Spring Cassette	1
57	141-2-8539-51400	Spring Arm Guide	1
58	141-2-8539-55500	Switch Position	1
59	141-2-8549-00600	Spring Lever Eject	1
60	141-2-8559-07300	Spring Reel FF	1
61	141-2-8559-07500	Spring Reel REW	1
62	141-2-8559-08000	Spring	2
63	141-2-8559-09600	Spring Lug	1
64	141-2-4219-29900	Screw	2
65	141-2-4219-02900	Screw	1
66	141-2-4219-10801	Screw	2
67	141-2-4219-11400	Screw	1
68	141-2-4219-17900	Screw, Pan Hd., +M2.6x2.7	2
69	4-2319-78250	Leaf Switch (Cassette) [SW29]	1
69	4-2319-78250	Leaf Switch (EQ) [SW30]	1
70	141-2-4569-08800	Washer	2
71	141-2-4539-06900	Washer	2
72	141-2-4539-21800	Washer	2
73	141-2-4539-35400	Washer	2
74	141-2-4539-33400	Washer	2
75	141-2-4539-15700	Washer	2
76	141-2-4539-19700	Washer	1
77	141-2-4539-27800	Washer	3
91	4-2262-18621	PCB Assist	1
92	4-2262-27800	PCB Connector 2	1
93	4-2262-28180	PCB Head	1
101	110-3-2101-70013	Spring Washer-2, M1.7	2
102	112-3-1302-00040	E Ring, M2.0	7
103	112-3-1303-00040	E Ring, M3.0	2
104	106-3-1302-00123	Hex. Nut-3, M2.0	2
105	128-3-1317-05013	PI Screw-3, Pan Hd., +M1.7x5.0	3
106	127-3-1217-02213	PI Screw-1, Flat Hd., +M1.7x2.2	2
107	101-3-1702-00513	Screw, Bind Hd., +M2.0x5	7
108	101-3-1702-00411	Screw, Bind Hd., +M2.0x4	6
109	101-3-1202-00511	Screw, Flat Hd., +M2.0x5	6
110	101-3-1702-00611	Screw, Bind Hd., +M2.0x6	1
111	101-3-1302-00311	Screw, Pan Hd., +M2.0x3	1
112	101-3-1702-01411	Screw, Bind Hd., +M2.0x14	1
113	101-3-1302-00411	Screw, Pan Hd., +M2.0x4	1
114	101-3-1302-60611	Screw, Pan Hd., +M2.6x6	2

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

CASSETTE DECK ELECTRICAL ADJUSTMENTS

BEFORE ADJUSTMENT

If the tape surface whitch contacts the head, the capstan, and the pinch roller, etc., is stained, it will cause unstable running of the tape, wow and flutter, imperfect recording and erasing, deterioration of tonal quality, and the tape jam around the capstan, etc. Occasionally clean each part as follows;

1. Cut off power.
2. Open the cassette lid.
3. Wipe the head, the capstan, and the pinch roller with a cotton swab. If they are excessively stained, clean them with the swab soaked in absolute alcohol or cleaning liquid on the market.

MEASURING INSTRUMENTS REQUIRED

- Dualtrace Oscilloscope
- AC VTVM (AC voltmeter with high impedance)
- DC VTVM (DC voltmeter with high impedance)
- Dummy Load (47kΩ)
- Frequency Counter
- Signal Oscillator
- Test Tapes
  - ‡ 10kHz Test Tape (For example: TEAC MTT-114) for Head Azimuth Adjustment
  - ‡ 3kHz Test Tape (For example: TEAC MTT-111) for Normal Tape Speed Adjustment
  - ‡ 1.5kHz Test Tape (For example: A.BEX TCW-211) for Double Tape Speed Adjustment
  - ‡ 400Hz Test Tape (For example: TEAC MTT-150) for Playback sensitivity Adjustment
- Test Tapes for Recording and Playback Operations
  - ‡ Normal Tape (Example: TDK AC 223)

SWITCH POSITIONS

Unless especially indicated, set switch as follows;

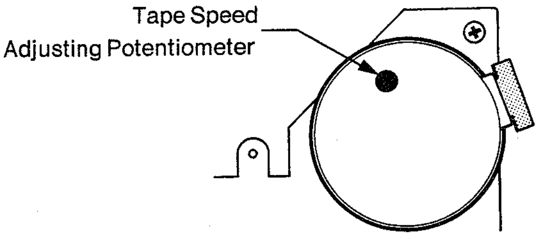
DOLBY NR Switch .... OFF

DECK 2 REEL MOTOR ADJUSTMENT

1. Install an empty cassette (one with no tape) in Deck 2 and set to the fast forward mode.
2. Connect a DC VTVM to both terminals of the reel motor, and adjust P502 in the CONTROL PCB so that the voltage between the terminals is 6.0V.

TAPE SPEED ADJUSTMENT (NORMAL SPEED)

1. Connect a dummy load (47KΩ) and frequency counter to the set's left LINE OUT terminal.
2. Install a test tape (For example: TEAC MTT-111) in Deck 1 and set to the playback mode.
3. Adjust the potentiometer in the capstan drive motor so that the reading on the frequency counter is 3000Hz ±10Hz.
4. Adjust Deck 2 in the same way as for Deck 1.

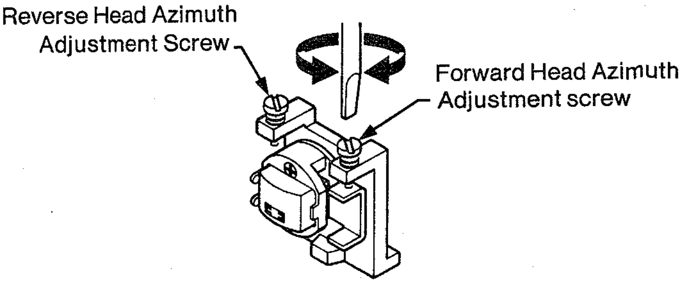


TAPE SPEED ADJUSTMENT (HIGH SPEED)

1. Connect a dummy load (47KΩ) and frequency counter to the set's left LINE OUT terminal.
2. Short circuit test pins A and B. (The set will be set to the high speed mode).
3. Install a test tape (For example: A.BEX TCW-211) in Deck 1 and set to the playback mode.
4. Adjust P401 in the CONTROL PCB so that the reading on the frequency counter is 3000Hz ±10Hz.
5. Adjust Deck 2 in the same way as for Deck 1 using P501.

HEAD AZIMUTH ADJUSTMENT

1. Connect dummy loads (47KΩ) and a dualtrase oscilloscope to the set's left and right LINE OUT terminals.
2. Install a test tape (For example: TEAC MTT-114) in Deck 1 and set to the forward playback mode.
3. Adjust the forward head azimuth adjustment screw so that the oscilloscope's waveform is maximum and so that the right waveform is over the left waveform.



4. Next turn the same tape over and set to the reverse playback mode.
5. Adjust the reverse head azimuth adjustment screw in the same way as for the forward side.
6. Repeat the above several time.
7. Adjust Deck 2 in the same way as for Deck 1.

CASSETTE DECK ELECTRICAL ADJUSTMENTS (Continued)

PLAYBACK SENSITIVITY ADJUSTMENT

1. Connect a dummy load (47KΩ) and an AC VTVM to the set's left LINE OUT terminal.
2. Install a test tape (For example: TEAC MTT-150) in Deck 1 and set to the playback mode.
3. Adjust P102 so that the voltage of the LINE OUT terminal is 500mV.
4. Connect a dummy load (47KΩ) and an AC VTVM to the set's right LINE OUT terminal and adjust P202 so that the voltage of the LINE OUT terminal is 500mV.
5. Install a test tape (For example: TEAC MTT-150) in Deck 2 and set to the playback mode.
6. Do the same for Deck 1, and adjust P101 (L) and P201 (R) so that the output is 500mV.

NOTE:
When adjusting one deck, set the other deck to the stop mode.

FL METER SENSITIVITY ADJUSTMENT

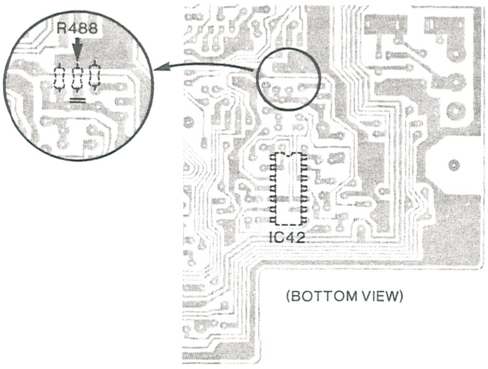
1. After the playback sensitivity adjustment was made, playback the test tape (for example: TEAC MTT-150) on Deck 1.
2. Adjust the P104 (L) and P204 (R) so that the level meter indicates the 0dB.

BIAS ADJUSTMENT

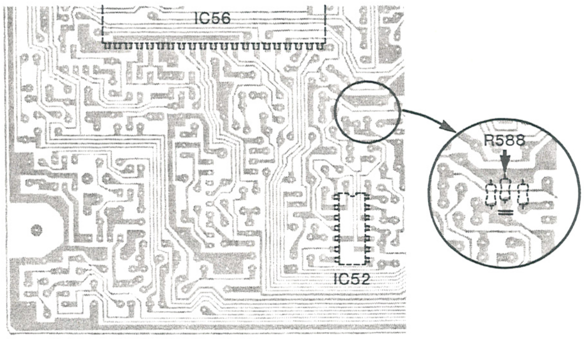
1. Connect a low frequency oscillator to the set's left LINE IN terminal and a dummy load (47KΩ) and AC VTVM to the left LINE OUT terminal.
2. Install a normal tape (For example: TDK AC223) in Deck 1.
3. Set the recoad balance control at the center position and then set the input level control to the maximam position.
4. Output 1kHz and 12kHz with −43dBs (7mV) from the low frequency oscillator and record these signals on the tape.
5. Play back the recorded signal and adjust P103 so that the difference between 1kHz and 12kHz is ±0.5dB.
6. Adjust right side in the same way as for left side using P203.

QUICK REVERSE ADJUSTMENT

1. Confirm that the quick reverse operate on Deck 1 and Deck 2.
2. Cut the R488 (Deck 1), R588 (Deck 2) pattern of the CONTROL PCB according to the side which the quick reverse does not operate.



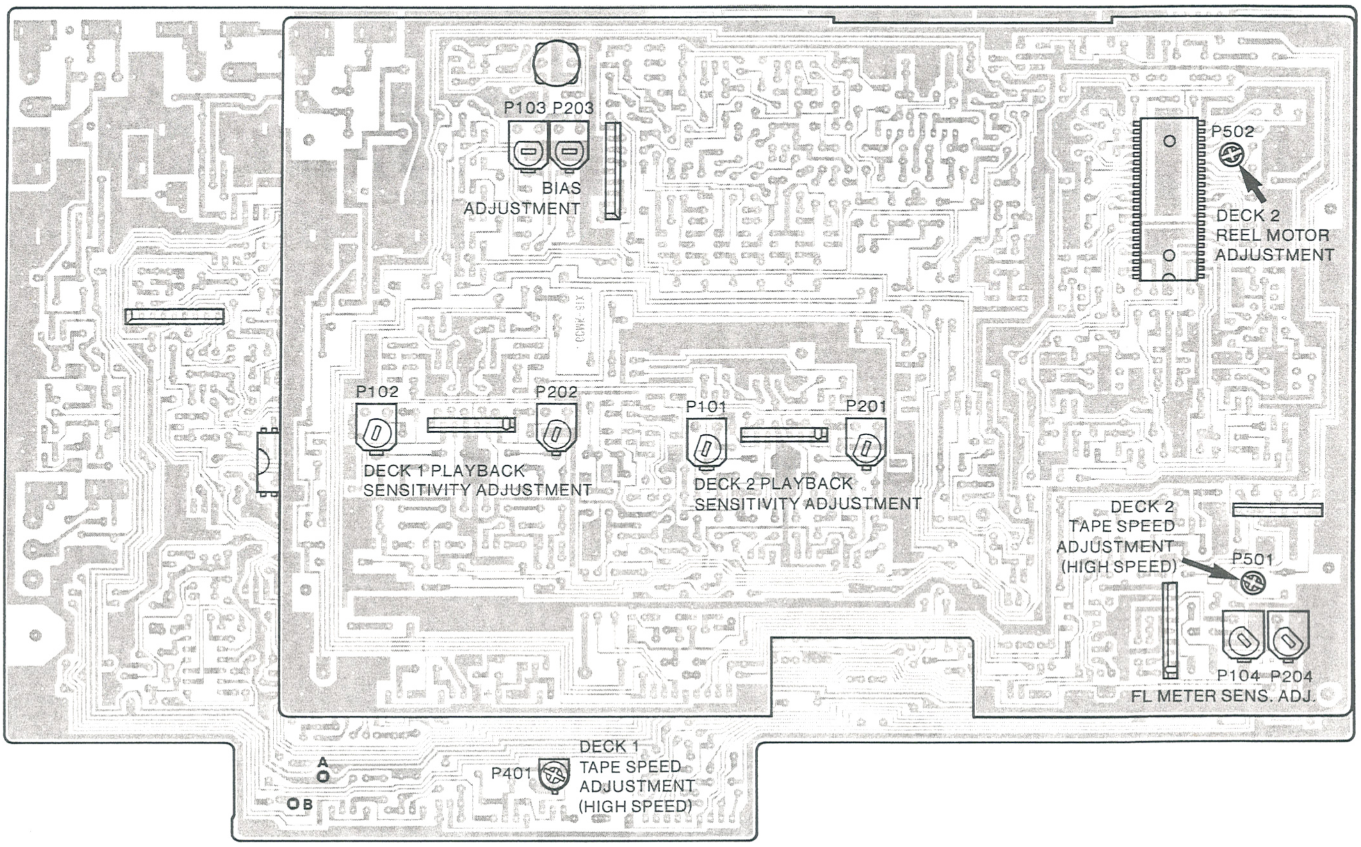
(BOTTOM VIEW)



(BOTTOM VIEW)

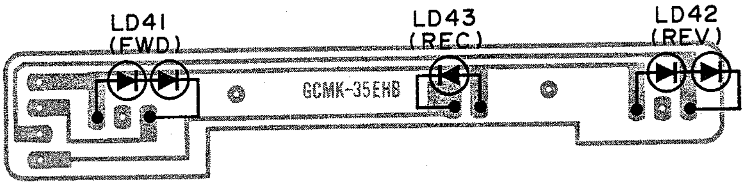
P.C.BOARD ALIGNMENT POINTS

(TOP VIEW)


P103 P203
BIAS ADJUSTMENT
P502
DECK 2 REEL MOTOR ADJUSTMENT
P102
P202
DECK 1 PLAYBACK SENSITIVITY ADJUSTMENT
P101
P201
DECK 2 PLAYBACK SENSITIVITY ADJUSTMENT
DECK 2 TAPE SPEED ADJUSTMENT (HIGH SPEED)
P501
P104 P204
FL METER SENS. ADJ.
A
B
P401
DECK 1 TAPE SPEED ADJUSTMENT (HIGH SPEED)

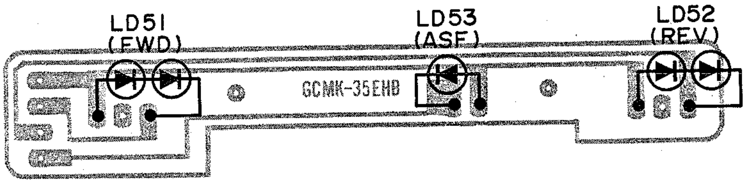
DIRECTION LED 1 P.C.BOARD

(BOTTOM VIEW)


LD41
(FWD)
LD43
(REC)
LD42
(REV)
GCMK-35EHB

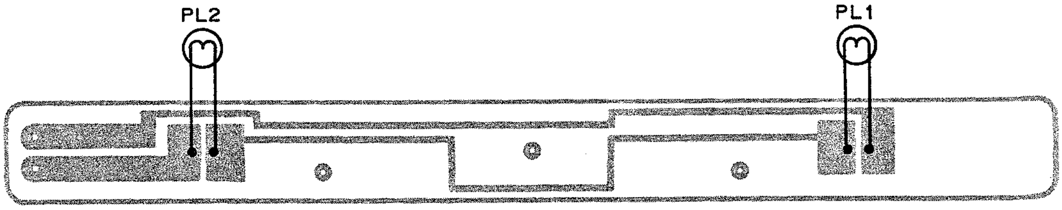
DIRECTION LED 2 P.C.BOARD

(BOTTOM VIEW)


LD51
(FWD)
LD53
(ASF)
LD52
(REV)
GCMK-35EHB

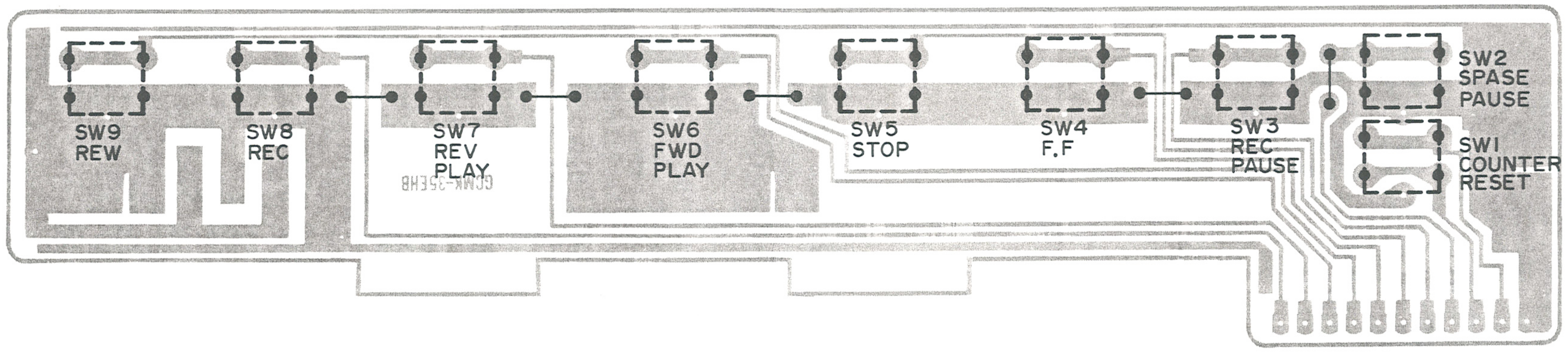
LAMP P.C.BOARD

(BOTTOM VIEW)



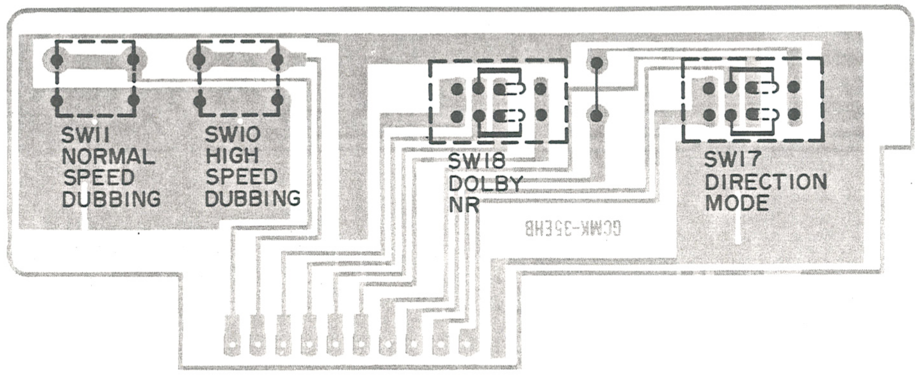
FUNCTION SWITCH 1 P.C.BOARD

(BOTTOM VIEW)


SW9
REW
SW8
REC
SW7
REV
PLAY
GCMK-35EHB
SW6
FWD
PLAY
SW5
STOP
SW4
F.F
SW3
REC
PAUSE
SW2
SPASE
PAUSE
SW1
COUNTER
RESET

FUNCTION SWITCH 2 P.C.BOARD

(BOTTOM VIEW)


SW11
NORMAL
SPEED
DUBBING
SW10
HIGH
SPEED
DUBBING
SW18
DOLBY
NR
GCMK-35EHB
SW17
DIRECTION
MODE

FUNCTION SWITCH 3 P.C.BOARD

(BOTTOM VIEW)

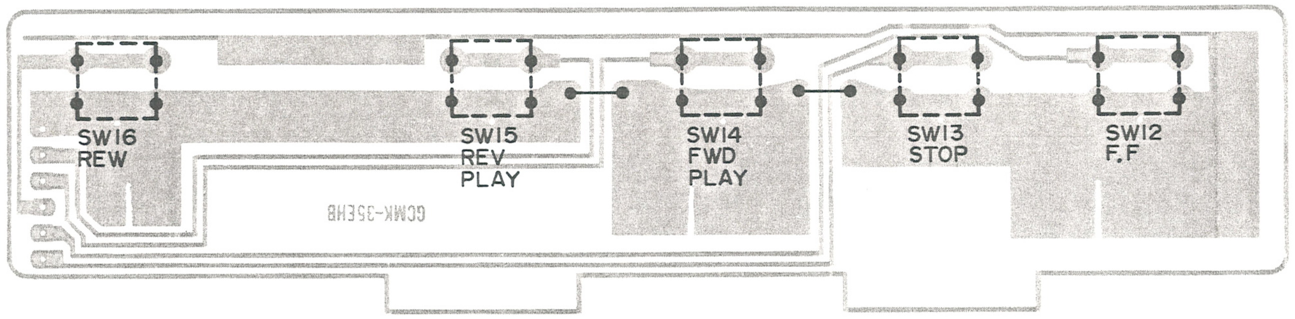
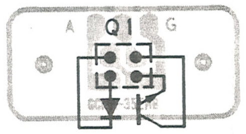

SW16
REW
SW15
REV
PLAY
GCMK-35EHB
SW14
FWD
PLAY
SW13
STOP
SW12
F.F

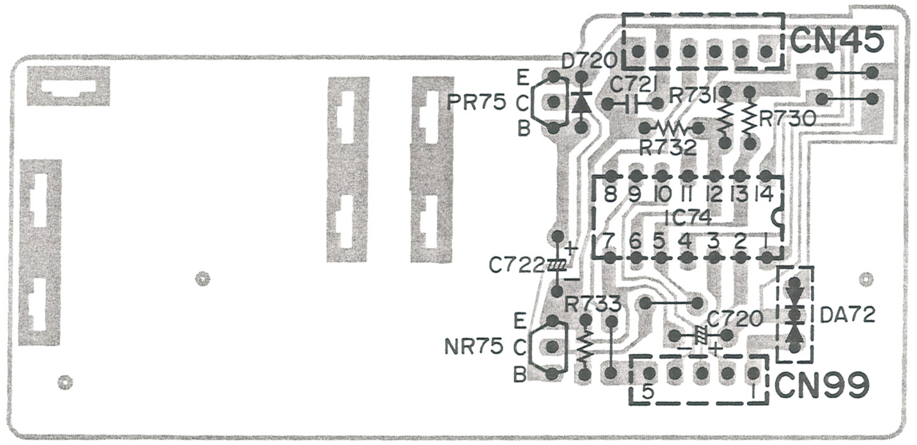
PHOTO P.C.BOARD

(BOTTOM VIEW)



SUB REMOCON P.C.BOARD

(BOTTOM VIEW)



CN45
D720
C721
R731
R730
R732
PR75
E
C
B
IC74
8 9 10 11 12 13 14
7 6 5 4 3 2 1
C722
R733
C720
DA72
NR75
CN99
5
1

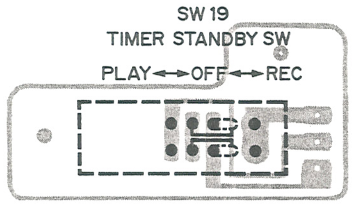
IC PIN NUMBERS DC VOLTAGES															
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14
IC74	TC4066B	5.0V	5.0V	5.0V	5.0V	4.5V	4.5V	0V	0.7V	0.7V	5.0V	5.0V	4.5V	4.5V	4.8V

HEADPHONE P.C.BOARD

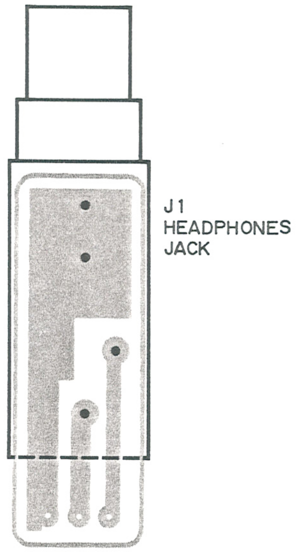
(BOTTOM VIEW)

TIMER P.C.BOARD

(BOTTOM VIEW)



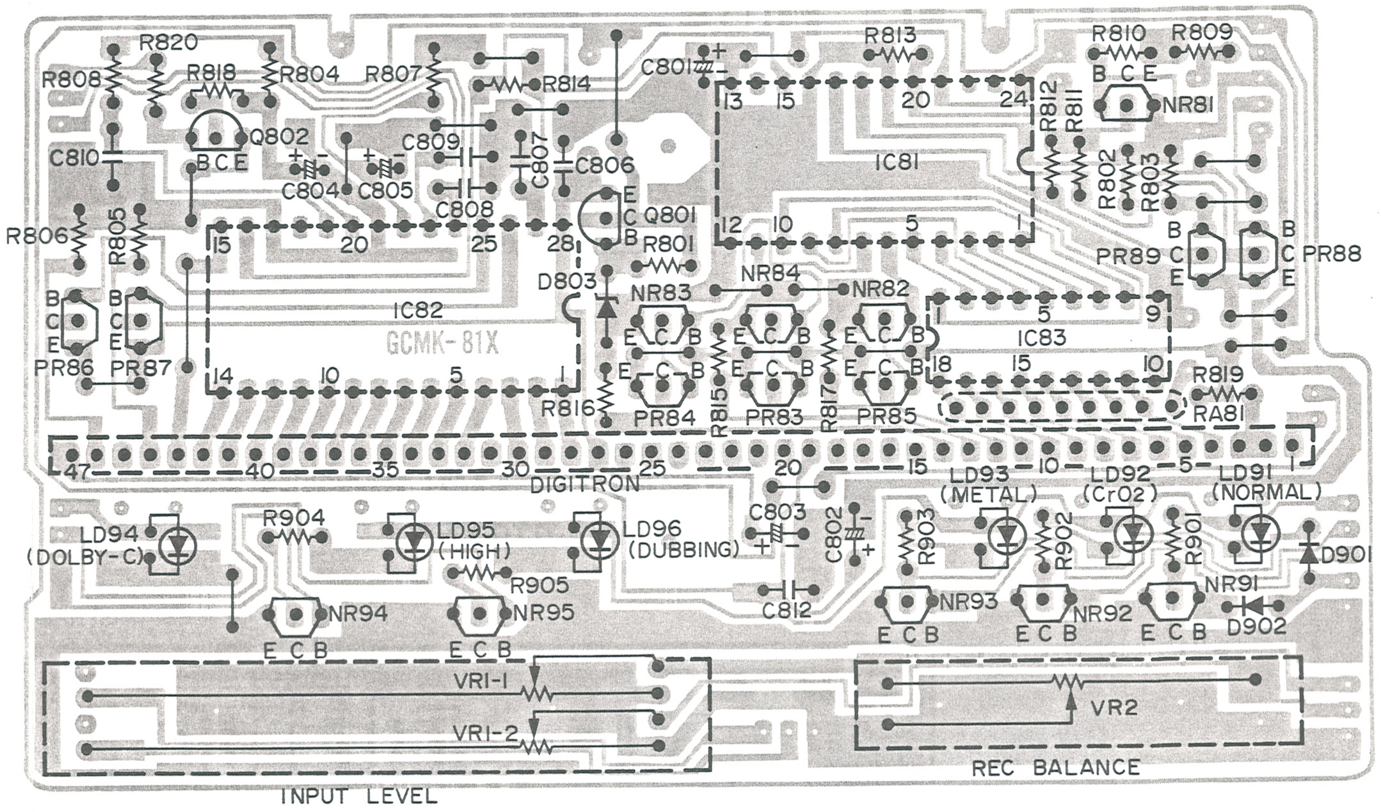
SW 19
TIMER STANDBY SW
PLAY↔OFF↔REC



J1
HEADPHONES
JACK

FL DISPLAY P.C.BOARD

(BOTTOM VIEW)



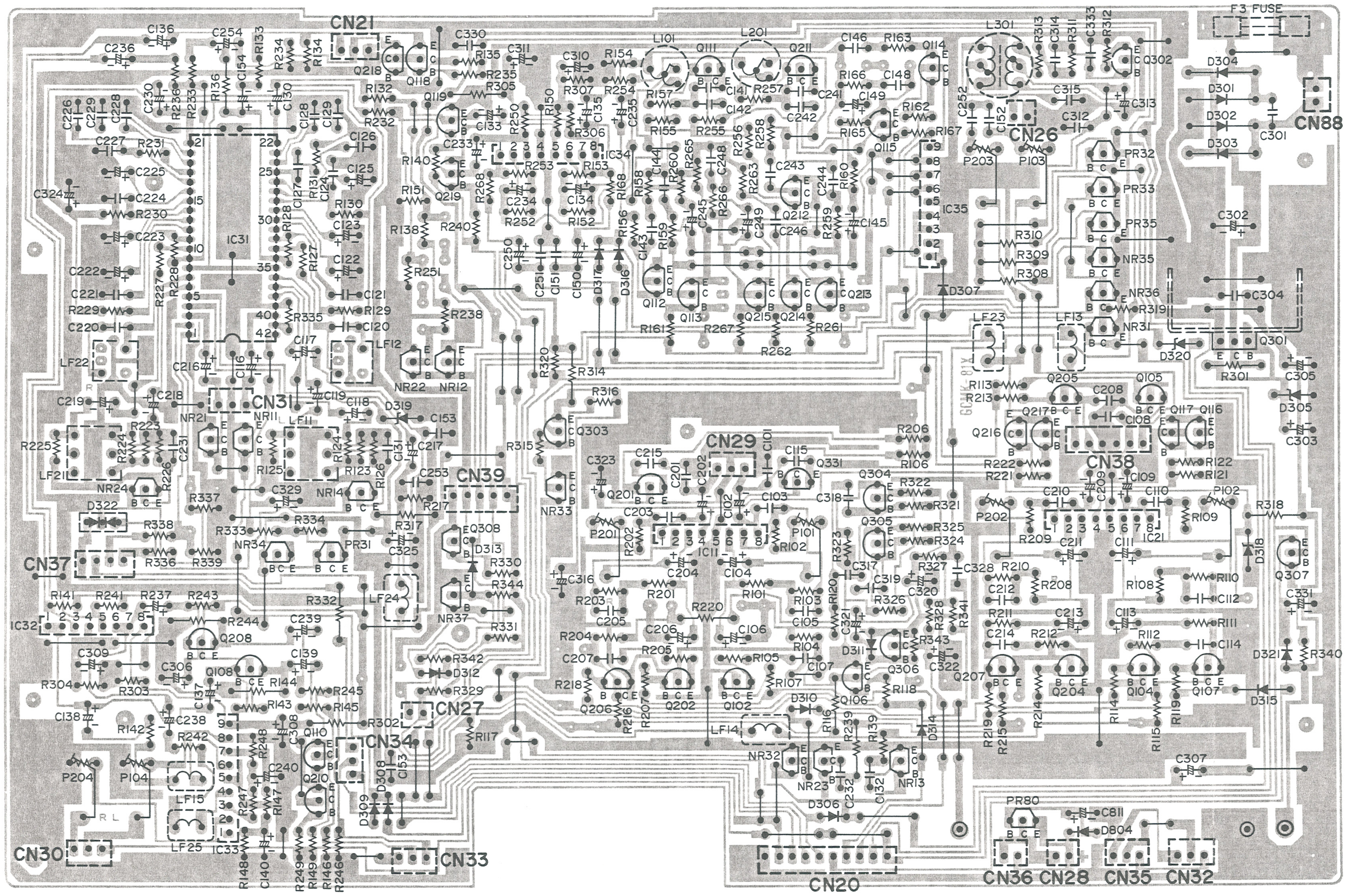
R820
R808
R818
R804
R807
R814
C801
R813
R810
R809
B C E
NR81
Q802
B C E
C810
C809
C807
C806
C804
C805
C808
Q801
E C B
R801
IC81
13 15 20 24
12 10 5 1
R812
R811
R802
R803
R806
R805
15 20 25 28
IC82
GCMK-81X
14 10 5 1
D803
NR83
NR84
NR82
E C B
PR89
PR88
IC83
5 9
18 15 10
PR86
PR87
R815
R816
R817
PR84
PR83
PR85
R819
RA81
47 40 35 30 25 20 15 10 5 1
DIGITRON
LD94
(DOLBY-C)
R904
LD95
(HIGH)
LD96
(DUBBING)
C803
C802
R903
LD93
(METAL)
R902
LD92
(CrO2)
R901
LD91
(NORMAL)
D901
R905
C812
NR94
NR95
NR93
NR92
NR91
D902
E C B
VRI-1
VRI-2
INPUT LEVEL
VR2
REC BALANCE

TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q801	2SD734	29.0V	33.5V	28.4V

IC PIN NUMBERS DC VOLTAGES																					
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC81	TC5054P	2.2V	4.4V	4.4V	2.2V	0V	1.1V	2.2V	0.9V	0.9V	0.9V	0.9V	0V	5.0V	–	0.8	0V	5.0	5.0	0V	0V
		21	22	23	24																
		5.0V	–	–	5.0V																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC82	MSL9359RS	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0.8V	0V	–	1.3V	2.5V
		21	22	23	24	25	26	27	28												
		0V	1.5V	0V	0V	16.4V	16.4V	5.0V	28.4V												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
IC83	LB1290	0.9V	0V	2.2V	0.9V	4.4V	4.4V	2.2V	0.9V	0V	33.8V	6.1	16.3V	32.5V	32.5V	6.1V	16.2V	0V	6.1V		

AUDIO P.C.BOARD

(BOTTOM VIEW)


F3 FUSE
CN21
CN88
CN26
CN31
CN29
CN38
CN39
CN37
CN27
CN34
CN30
CN33
CN20
CN36
CN28
CN35
CN32
IC31
IC34
IC35
IC11
IC21
IC32
IC33
L101
L201
L301
LF11
LF12
LF13
LF14
LF15
LF21
LF22
LF23
LF24
LF25
R L

IC PIN NUMBERS DC VOLTAGES

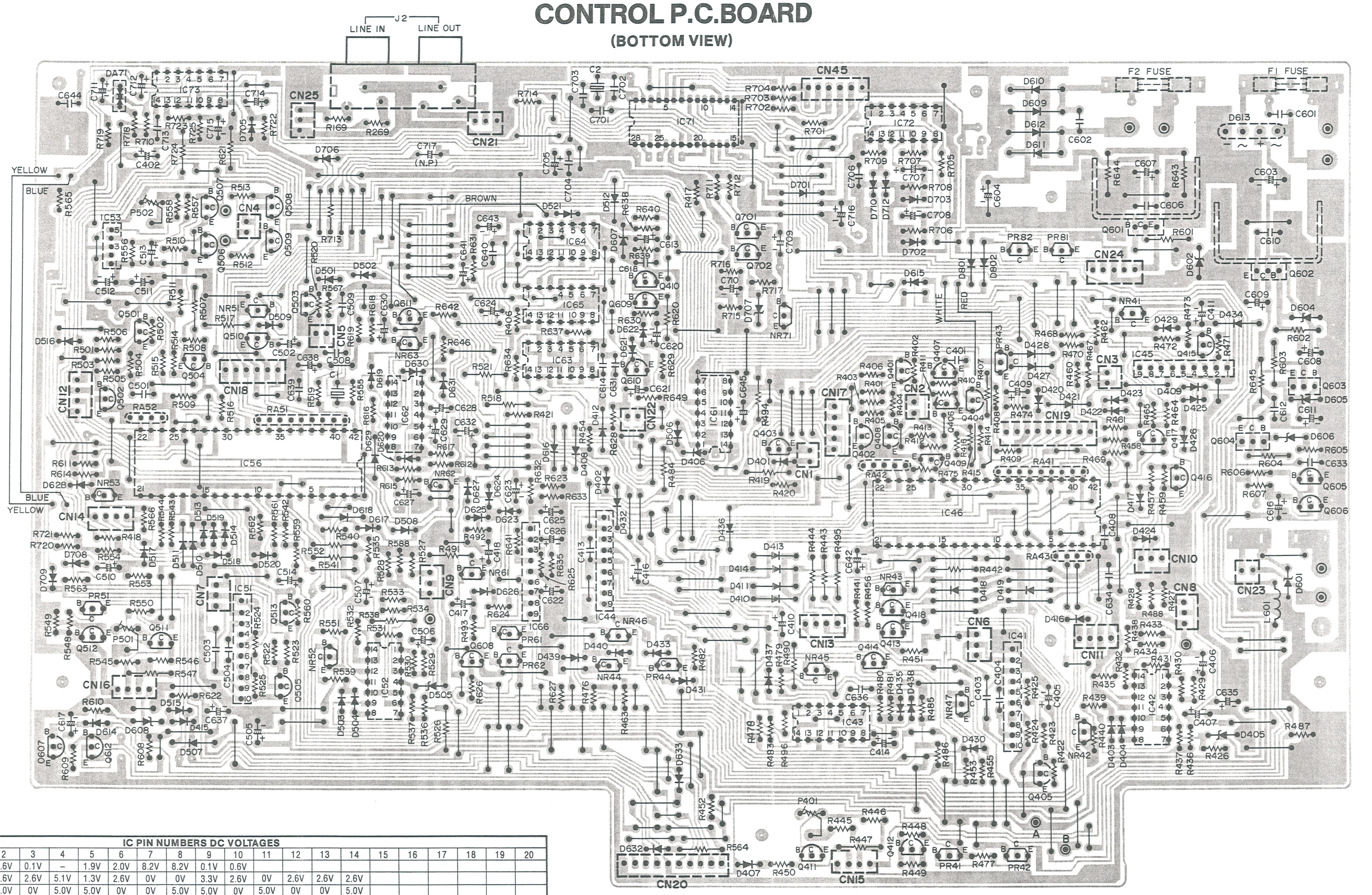
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC11	BA3302	1.5V	0.9V	4.5V	11.2V	0V	4.5V	0.9V	1.5V												
IC21	BA3302	1.4V	0.9V	4.9V	11.2V	0V	4.6V	0.9V	1.4V												
IC31	CX-20187	0V	8.8V	6.0V	11.7V	6.0V	6.0V	6.0V	6.0V	6.4V	6.0V	6.2V	6.2V	0.3V	0.2V	6.0V	0.3V	0.2V	6.0V	6.2V	6.2V
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
		6.2V	6.2V	6.2V	6.2V	6.0V	0.3V	0.3V	6.0V	0.2V	0.2V	6.2V	6.2V	6.0V	6.4V	6.0V	6.0V	6.0V	6.0V	0V	6.0V
		41	42																		
		1.3V	11.7V																		
		1	2	3	4	5	6	7	8	9											
IC32	M5218L	6.3V	6.3V	6.2V	0V	6.2V	6.3V	6.3V	12.4V												
IC33	BA6138	–	0V	0.6V	2.0V	0V	2.0V	0.6V	0V	12.4V											
IC34	M5218L	6.5V	6.5V	6.5V	0V	6.5V	6.5V	6.5V	13.0V												

TRANSISTOR DC VOLTAGES (* = REC Mode)

SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q301	2SD1666	15.6V	20.0V	15.0V	* NR35	RN1201	6.1V	14.6V	15.0V
* Q302	2SC2274	0.9V	13.5V	0.7V	* NR36	RN1205	2.0V	0.1V	0V
Q304	2SC536	0.7V	3.2V	0.1V	* PR32	RN2205	6.1V	14.6V	15.0V
Q305	2SC536	1.3V	3.6V	0.7V	* PR33	RN2205	0.1V	14.4V	14.6V
Q306	2SC536	0V	0.8V	0V	* PR35	RN2205	14.5V	13.4V	14.6V

CONTROL P.C.BOARD

(BOTTOM VIEW)


J2
LINE IN
LINE OUT
F2 FUSE
F1 FUSE
CN45
CN25
CN21
IC73
IC71
IC72
DA71
D610
D609
D612
D611
D613
C601
C602
C603
C604
C606
C607
R643
R644
YELLOW
BLUE
BROWN
WHITE
RED
CN4
IC53
IC64
IC65
IC63
IC62
IC61
IC56
IC46
IC45
IC44
IC51
IC52
IC41
IC42
IC43
IC66
CN5
CN12
CN18
CN22
CN17
CN2
CN1
CN19
CN3
CN24
CN14
CN7
CN9
CN16
CN13
CN6
CN10
CN8
CN23
CN11
CN20
CN15
RA52
RA51
RA42
RA43
PR81
PR82
PR51
PR61
PR62
PR44
PR41
PR42
P501
P502
P401
NR51
NR53
NR63
NR62
NR61
NR52
NR41
NR71
NR43
NR45
NR44
NR46
NR47
NR42
L601
A
B

IC PIN NUMBERS DC VOLTAGES

SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
IC41	BA6109	0V	0.6V	0.1V	–	1.9V	2.0V	8.2V	8.2V	0.1V	0.6V										
IC42	LA6324	2.6V	2.6V	2.6V	5.1V	1.3V	2.6V	0V	0V	3.3V	2.6V	0V	2.6V	2.6V	2.6V						
IC43	TC4011BP	5.0V	5.0V	0V	5.0V	5.0V	0V	0V	5.0V	5.0V	0V	5.0V	0V	0V	5.0V						
IC44	TD62554S	3.6V	0V	0V	0V	0V	5.1V	5.0V	5.1V	0V											
IC45	TD62551S	0V	0.1V	0.7V	0.7V	0V	0V	0V	0.3V	4.5V											
IC51	BA6109	0V	0.7V	0.1V	–	2.0V	2.0V	8.2V	8.2V	0.1V	0.7V										
IC52	LA6324	2.6V	2.6V	2.6V	5.1V	1.3V	2.3V	0V	0V	3.3V	2.3V	0V	2.6V	2.6V	2.3V						
IC53	LA5522	9.7V	4.7V	0V	8.6V	8.1V															
IC61	TC4012BP	4.9V	5.0V	5.0V	5.0V	0V	–	0V	–	0.5V	5.0V	5.0V	4.5V	4.8V	5.0V						
IC62	TC4081BP	0V	0V	0V	0V	0V	4.0V	0V	0V	0V	0V	0V	0V	0V	5.0V						
IC63	TC4011BP	0V	0V	5.0V	0V	5.0V	5.0V	0V	0V	0V	5.0V	0V	3.8V	3.8V	5.0V						
IC64	TC4011BP	0V	0V	5.0V	0V	3.8V	3.8V	0V	5.0V	5.0V	0V	5.0V	5.0V	0V	5.0V						
IC65	TC4082BP	0V	0V	0V	5.0V	4.5V	–	0V	–	0V	0V	0V	0V	0V	0V						
IC66	TD62551S	0V	0V	0V	0V	0V	4.8V	0.7V	0V	12.1V											
IC71	TMP4270N	1.5V	1.5V	5.0V	5.0V	5.0V	5.0V	0.7V	0V	5.0V	5.0V	5.0V	5.0V	5.0V	0V	0V	5.0V	4.5V	4.5V	–	5.0V
		21	22	23	24	25	26	27	28												
		5.0V	5.0V	5.0V	–	5.0V	5.0V	–	5.0V												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14						
IC72	TC4011BP	5.0V	5.0V	–	5.0V	0V	0V	0V	5.0V	0V	5.0V	0V	5.0V	4.1V	5.0V						
IC73	TC4069BP	4.5V	0V	4.5	0V	0V	5.0V	0V	5.0V	0V	5.0V	0V	0V	4.6V	5.0V						

TRANSISTOR DC VOLTAGES

SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q404	2SD400	8.2V	12.1V	7.9V	Q417	2SC536	0.1V	5.1V	5.0V	Q601	2SC1846	34.2V	40.4V	33.5V
Q405	2SD400	8.8V	8.8V	8.2V	Q504	2SD400	10.3V	12.1V	9.7V	Q602	2SD880	12.7V	17.9V	12.1V
Q406	2SA562	7.9V	0V	7.9V	Q505	2SD400	8.8V	8.8V	8.2V	Q603	2SD880	9.4V	17.9V	8.8V
Q407	2SA562	7.9V	0V	7.9V	Q506	2SA562	9.7V	0.2V	9.7V	Q604	2SC1846	5.8V	11.1V	5.2V
Q408	2SC1959	0V	0V	0V	Q507	2SA562	9.7V	0.2V	9.7V	Q607	2SC536	0.7V	0V	0V
Q409	2SC1959	0V	0V	0V	Q508	2SC1959	0.2V	0.2V	4.7V	Q612	2SA608	11.4V	12.0V	12.1V
Q411	2SD1450	2.2V	12.1V	12.1V	Q509	2SC1959	0.2V	0.2V	4.7V					
Q416	2SA608	4.3V	0V	4.3V	Q511	2SD1450	0.1V	0.2V	12.1V					

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	AUDIO P.C.B. ASSY		
61	141-0-1939-15831	Audio P.C.B. Assy	1
	4-2369-73780	RT Pin 1P	3
	⚠ 4-2352-01940	Fuse Clip	2
	131-2-6201-33600	Heatsink (for Q301)	1
CN20	4-2369-71471	Plug 10P	1
CN21	4-2369-73130	Connector 3P	1
CN26	4-2362-00770	Plug 2P	1
CN27	4-2362-00770	Plug 2P	1
CN28	4-2362-00770	Plug 2P	1
CN29	4-2369-73130	Connector 3P	1
CN30	4-2369-73130	Connector 3P	1
CN31	4-2369-73130	Connector 3P	1
CN32	4-2369-73130	Connector 3P	1
CN33	4-2369-74490	Plug 3P	1
CN34	4-2369-71482	Plug 3P	1
CN35	4-2369-73130	Connector 3P	1
CN36	4-2362-00770	Plug 2P	1
CN37	4-2369-71851	Plug 4P	1
CN38	4-2369-73160	Connector 6P	1
CN39	4-2369-73150	Connector 5P	1
CN88	4-2362-00770	Plug 2P	1
F3	⚠ 4-2349-70380	Fuse (T630mA)	1
L101	4-2559-70261	Coil	1
L201	4-2559-70261	Coil	1
L301	4-2589-73220	Coil OSC	1
LF11	4-2729-70880	Dolby Filter	1
LF12	4-2729-70860	Filter Skewing	1
LF13	4-2529-70430	Bias Trap	1
LF14	4-2529-70420	Bias Trap	1
LF15	4-2529-70271	Bias Trap Coil	1
LF21	4-2729-70880	Dolby Filter	1
LF22	4-2729-70860	Filter Skewing	1
LF23	4-2529-70430	Bias Trap	1
LF24	4-2529-70420	Bias Trap	1
LF25	4-2529-70271	Bias Trap Coil	1
NR11	4-2039-72640	Digitra, RN1202	1
NR12	4-2039-72620	Digitra, RN1201	1
NR13	4-2039-72640	Digitra, RN1202	1
NR14	4-2039-72500	Digitra, RN1203	1
NR21	4-2039-72640	Digitra, RN1202	1
NR22	4-2039-72620	Digitra, RN1201	1
NR23	4-2039-72640	Digitra, RN1202	1
NR24	4-2039-72500	Digitra, RN1203	1
NR31	4-2039-72640	Digitra, RN1202	1
NR32	4-2039-72640	Digitra, RN1202	1
NR33	4-2039-72640	Digitra, RN1202	1
NR34	4-2039-72640	Digitra, RN1202	1
NR35	4-2039-72620	Digitra, RN1201	1
NR36	4-2039-72630	Digitra, RN1205	1
NR37	4-2039-72630	Digitra, RN1205	1
P101	4-2222-01450	Semi-fixed (B-200Ω)	1
P102	4-2222-01450	Semi-fixed (B-200Ω)	1
P103	4-2229-72971	Potentiometer (B-100kΩ)	1
P104	4-2222-01400	Potentiometer (B-100kΩ)	1
P201	4-2222-01450	Semi-fixed (B-200Ω)	1
P202	4-2222-01450	Semi-fixed (B-200Ω)	1
P203	4-2229-72971	Potentiometer (B-100kΩ)	1
P204	4-2222-01400	Potentiometer (B-10kΩ)	1
PR31	4-2039-72650	Digitra, RN2202	1
PR32	4-2039-72610	Digitra, RN2205	1
PR33	4-2039-72610	Digitra, RN2205	1
PR35	4-2039-72610	Digitra, RN2205	1
PR80	4-2039-72490	Digitra, RN2203	1
D301	202-5-2540-13552	Diode, DS 135	1
D302	202-5-2540-13552	Diode, DS 135	1
D303	202-5-2540-13552	Diode, DS 135	1
D304	202-5-2540-13552	Diode, DS 135	1
D305	202-5-3210-15012	Zener Diode, GZA 15Y	1
D306	202-5-1410-00110	Diode, GMA 01	1
D307	202-5-1410-00110	Diode, GMA 01	1
D308	202-5-1410-00110	Diode, GMA 01	1
D309	202-5-1410-00110	Diode, GMA 01	1
D310	202-5-1410-00110	Diode, GMA 01	1
D311	202-5-1410-00110	Diode, GMA 01	1
D312	202-5-1410-00110	Diode, GMA 01	1
D313	202-5-2810-44210	Diode, DS 442	1
D314	202-5-1410-00110	Diode, GMA 01	1
D315	202-5-2810-44210	Diode, DS 442	1
D316	202-5-1410-00110	Diode, GMA 01	1
D317	202-5-1410-00110	Diode, GMA 01	1
D318	202-5-3210-11012	Zener Diode, GZA 11Y	1
D319	202-5-3210-11013	Zener Diode, GZA 11Z	1
D320	202-5-3210-05613	Zener Diode, GZA5.6Z	1
D321	202-5-1410-00110	Diode, GMA 01	1
D322	4-2029-75070	Diode, DAN209S	1
D804	202-5-1410-00110	Diode, GMA 01	1
IC11	4-2069-71870	IC, BA 3302	1
IC21	4-2069-71870	IC, BA 3302	1
IC31	4-2069-74870	IC, CX-20187	1
IC32	4-2069-74450	IC, M5218L	1
IC33	4-2069-75550	IC, BA 6138	1
IC34	4-2069-74450	IC, M5218L	1
IC35	4-2069-74470	IC, TD62554S	1
Q101	203-5-5083-33165	Transistor, 2SC 3331	1
Q102	203-5-5000-53660	Transistor, 2SC 536	1
Q104	203-5-5000-53660	Transistor, 2SC 536	1
Q105	4-2039-71420	Transistor, 2SD 1450	1
Q106	4-2039-71420	Transistor, 2SD 1450	1
Q107	4-2039-71420	Transistor, 2SD 1450	1
Q108	203-5-5000-53660	Transistor, 2SC 536	1
Q110	4-2039-71420	Transistor, 2SD 1450	1
Q111	203-5-5000-53660	Transistor, 2SC 536	1
Q112	203-5-5000-53660	Transistor, 2SC 536	1
Q113	203-5-5000-53660	Transistor, 2SC 536	1
Q114	203-5-5000-53660	Transistor, 2SC 536	1
Q115	203-5-5000-53660	Transistor, 2SC 536	1
Q116	203-5-3983-70860	Transistor, 2SC 3708	1
Q117	203-5-3983-70860	Transistor, 2SC 3708	1
Q118	4-2039-71420	Transistor, 2SD 1450	1
Q119	4-2039-71420	Transistor, 2SD 1450	1
Q201	203-5-5083-33165	Transistor, 2SC 3331	1
Q202	203-5-5000-53660	Transistor, 2SC 536	1
Q204	203-5-5000-53660	Transistor, 2SC 536	1
Q205	4-2039-71420	Transistor, 2SD 1450	1
Q206	4-2039-71420	Transistor, 2SD 1450	1
Q207	4-2039-71420	Transistor, 2SD 1450	1
Q208	203-5-5000-53660	Transistor, 2SC 536	1
Q210	4-2039-71420	Transistor, 2SD 1450	1
Q211	203-5-5000-53660	Transistor, 2SC 536	1
Q212	203-5-5000-53660	Transistor, 2SC 536	1
Q213	203-5-5000-53660	Transistor, 2SC 536	1
Q214	203-5-5000-53660	Transistor, 2SC 536	1
Q215	203-5-5000-53660	Transistor, 2SC 536	1
Q216	203-5-3983-70860	Transistor, 2SC 3708	1
Q217	203-5-3983-70860	Transistor, 2SC 3708	1
Q218	4-2039-71420	Transistor, 2SD 1450	1
Q219	4-2039-71420	Transistor, 2SD 1450	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
Q301	203-5-5851-66670	Transistor, 2SD 1666				1
Q302	203-5-7252-27450	Transistor, 2SC 2274				1
Q303	203-5-4551-01616	Transistor, 2SA1016				1
Q304	203-5-5000-53660	Transistor, 2SC 536				1
Q305	203-5-5000-53660	Transistor, 2SC 536				1
Q306	203-5-5000-53660	Transistor, 2SC 536				1
Q307	203-5-7200-60860	Transistor, 2SA 608				1
Q308	203-5-5000-53660	Transistor, 2SC 536				1
C101	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C102	CD1-0-6500-0001V	Electrolytic	10μF	50V		1
C103	CC4-7-1500-KE00C	Ceramic	470pF	50V	±10%	1
C104	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C105	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C106	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C107	CM1-8-3500-K00SV	Mylar	0.018μF	50V	±10%	1
C108	CC6-8-1500-KE00C	Ceramic	680pF	50V	±10%	1
C109	CD1-0-6500-0001V	Electrolytic	10μF	50V		1
C110	CC4-7-1500-KE00C	Ceramic	470pF	50V	±10%	1
C111	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C112	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C113	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C114	CM1-8-3500-K00SV	Mylar	0.018μF	50V	±10%	1
C115	CC3-9-1500-KE00C	Ceramic	390pF	50V	±10%	1
C116	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C117	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C118	CD4-7-5500-0001V	Electrolytic	4.7μF	50V		1
C119	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C120	CC6-8-1500-KE00C	Ceramic	680pF	50V	±10%	1
C121	CM4-7-2500-K00SV	Mylar	0.0047μF	50V	±10%	1
C122	CD4-7-4500-0KB1V	Electrolytic	0.47μF	50V		1
C123	CD1-5-4500-0KB1V	Electrolytic	0.15μF	50V		1
C124	CM1-5-3500-K00SV	Mylar	0.015μF	50V	±10%	1
C125	CD2-2-4500-0KB1V	Electrolytic	0.22μF	50V		1
C126	CM6-8-3500-K00SV	Mylar	0.068μF	50V	±10%	1
C127	CM4-7-3500-K00SV	Mylar	0.047μF	50V	±10%	1
C128	CM6-8-2500-K00SV	Mylar	0.0068μF	50V	±10%	1
C129	CM1-0-3500-K00SV	Mylar	0.01μF	50V	±10%	1
C130	CD4-7-5500-0001V	Electrolytic	4.7μF	50V		1
C131	CM3-3-2500-K00SV	Mylar	0.0033μF	50V	±10%	1
C132	CM3-3-2500-K00SV	Mylar	0.0033μF	50V	±10%	1
C133	CD4-7-4500-0001V	Electrolytic	0.47μF	50V		1
C134	CD1-0-4500-0001V	Electrolytic	0.1μF	50V		1
C135	CD3-3-6100-0001V	Electrolytic	33μF	10V		1
C136	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C137	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C138	CD2-2-4500-0001V	Electrolytic	0.22μF	50V		1
C139	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
C140	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C141	CM1-2-2500-K00SV	Mylar	0.0012μF	50V	±10%	1
C142	CM3-9-2500-K00SV	Mylar	0.0039μF	50V	±10%	1
C143	CM2-2-2500-K00SV	Mylar	0.0022μF	50V	±10%	1
C144	CM1-8-2500-K00SV	Mylar	0.0018μF	50V	±10%	1
C145	CD2-2-6160-0001V	Electrolytic	22μF	16V		1
C146	CM1-2-3500-K00SV	Mylar	0.012μF	50V	±10%	1
C148	CM1-2-3500-K00SV	Mylar	0.012μF	50V	±10%	1
C149	CD2-2-6160-0001V	Electrolytic	22μF	16V		1
C150	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C151	CC4-7-1500-KE00C	Ceramic	470pF	50V	±10%	1
C152	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C153	CC6-8-1500-KE00C	Ceramic	680pF	50V	±10%	1
C154	CD4-7-5500-0001V	Electrolytic	4.7μF	50V		1
C201	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C202	CD1-0-6500-0001V	Electrolytic	10μF	50V		1
C203	CC4-7-1500-KE00C	Ceramic	470pF	50V	±10%	1
C204	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C205	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C206	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C207	CM1-8-3500-K00SV	Mylar	0.018μF	50V	±10%	1
C208	CC6-8-1500-KE00C	Ceramic	680pF	50V	±10%	1
C209	CD1-0-6500-0001V	Electrolytic	10μF	50V		1
C210	CC4-7-1500-KE00C	Ceramic	470pF	50V	±10%	1
C211	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C212	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C213	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C214	CM1-8-3500-K00SV	Mylar	0.018μF	50V	±10%	1
C215	CC3-9-1500-KE00C	Ceramic	390pF	50V	±10%	1
C216	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C217	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C218	CD4-7-5500-0001V	Electrolytic	4.7μF	50V		1
C219	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C220	CC6-8-1500-KE00C	Ceramic	680pF	50V	±10%	1
C221	CM4-7-2500-K00SV	Mylar	0.0047μF	50V	±10%	1
C222	CD4-7-4500-0KB1V	Electrolytic	0.47μF	50V		1
C223	CD1-5-4500-0KB1V	Electrolytic	0.15μF	50V		1
C224	CM1-5-3500-K00SV	Mylar	0.015μF	50V	±10%	1
C225	CD2-2-4500-0KB1V	Electrolytic	0.22μF	50V		1
C226	CM6-8-3500-K00SV	Mylar	0.068μF	50V	±10%	1
C227	CM4-7-3500-K00SV	Mylar	0.047μF	50V	±10%	1
C228	CM6-8-2500-K00SV	Mylar	0.0068μF	50V	±10%	1
C229	CM1-0-3500-K00SV	Mylar	0.01μF	50V	±10%	1
C230	CD4-7-5500-0001V	Electrolytic	4.7μF	50V		1
C231	CM3-3-2500-K00SV	Mylar	0.0033μF	50V	±10%	1
C232	CM3-3-2500-K00SV	Mylar	0.0033μF	50V	±10%	1
C233	CD4-7-4500-0001V	Electrolytic	0.47μF	50V		1
C234	CD1-0-4500-0001V	Electrolytic	0.1μF	50V		1
C235	CD3-3-6100-0001V	Electrolytic	33μF	10V		1
C236	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C237	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C238	CD2-2-4500-0001V	Electrolytic	0.22μF	50V		1
C239	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
C240	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C241	CM1-2-2500-K00SV	Mylar	0.0012μF	50V	±10%	1
C242	CM3-9-2500-K00SV	Mylar	0.0039μF	50V	±10%	1
C243	CM2-2-2500-K00SV	Mylar	0.0022μF	50V	±10%	1
C244	CM1-8-2500-K00SV	Mylar	0.0018μF	50V	±10%	1
C245	CD2-2-6160-0001V	Electrolytic	22μF	16V		1
C246	CM1-2-3500-K00SV	Mylar	0.012μF	50V	±10%	1
C248	CM1-2-3500-K00SV	Mylar	0.012μF	50V	±10%	1
C249	CD2-2-6160-0001V	Electrolytic	22μF	16V		1
C250	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C251	CC4-7-1500-KE00C	Ceramic	470pF	50V	±10%	1
C252	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C253	CC6-8-1500-KE00C	Ceramic	680pF	50V	±10%	1
C254	CD4-7-5500-0001V	Electrolytic	4.7μF	50V		1
C301	CC2-2-3500-ZG00C	Ceramic	0.022μF	50V	+80,-20%	1
C302	CD1-0-8250-0001V	Electrolytic	1000μF	25V		1
C303	CD4-7-7160-0006V	Electrolytic	470μF	16V		1
C304	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C305	CD1-0-7160-0001V	Electrolytic	100μF	16V		1
C306	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
C307	CD1-0-7160-0001V	Electrolytic	100μF	16V		1
C308	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
C309	CD2-2-6160-0001V	Electrolytic	22μF	16V		1
C310	CD2-2-6160-0001V	Electrolytic	22μF	16V		1
C311	CD1-0-8160-0006V	Electrolytic	1000μF	16V		1
C312	CC2-2-2500-KE00C	Ceramic	0.0022μF	50V	±10%	1
C313	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C314	CM1-0-3500-K00SV	Mylar	0.01μF	50V	±10%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C315	CP1-0-3251-J000V	Polypropylen	0.01μF	250V	±5%	1
C316	CD3-3-7160-0006V	Electrolytic	330μF	16V		1
C317	CC6-8-2500-KE00C	Ceramic	0.0068μF	50V	±10%	1
C318	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C319	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C320	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
C321	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C322	CD2-2-6160-0001V	Electrolytic	22μF	16V		1
C323	CD1-0-7160-0001V	Electrolytic	100μF	16V		1
C324	CD1-0-8100-0006V	Electrolytic	1000μF	10V		1
C325	CD2-2-7160-0006V	Electrolytic	220μF	16V		1
C328	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C329	CD3-3-6160-0001V	Electrolytic	33μF	16V		1
C330	CC4-7-1500-KE00C	Ceramic	470pF	50V	±10%	1
C331	CD4-7-7160-0006V	Electrolytic	470μF	16V		1
C333	CM1-0-3500-K00SV	Mylar	0.01μF	50V	±10%	1
C811	CD2-2-6160-0001V	Electrolytic	22μF	16V		1
R101	401 032 0608	CARBON 5.6K JA 1/8W				1
R102	401 029 9102	CARBON 22 JA 1/8W				1
R103	401 028 8106	CARBON 120K JA 1/8W				1
R104	401 030 4202	CARBON 2.7K JA 1/8W				1
R105	401 031 2405	CARBON 3.9K JA 1/8W				1
R106	401 028 3705	CARBON 10K JA 1/8W				1
R107	401 029 9706	CARBON 220 JA 1/8W				1
R108	401 032 0608	CARBON 5.6K JA 1/8W				1
R109	401 029 9102	CARBON 22 JA 1/8W				1
R110	401 029 2004	CARBON 150K JA 1/8W				1
R111	401 030 4202	CARBON 2.7K JA 1/8W				1
R112	401 031 2405	CARBON 3.9K JA 1/8W				1
R113	401 031 6601	CARBON 4.7K JA 1/8W				1
R114	401 031 6601	CARBON 4.7K JA 1/8W				1
R115	401 029 1502	CARBON 15K JA 1/8W				1
R116	401 014 5201	CARBON 15K JA 1/4W				1
R117	401 029 1502	CARBON 15K JA 1/8W				1
R118	401 031 2405	CARBON 3.9K JA 1/8W				1
R119	401 031 2405	CARBON 3.9K JA 1/8W				1
R120	401 030 9702	CARBON 33K JA 1/8W				1
R121	401 032 4606	CARBON 6.8K JA 1/8W				1
R122	401 030 0204	CARBON 2.2K JA 1/8W				1
R123	401 032 8703	CARBON 8.2K JA 1/8W				1
R124	401 032 4606	CARBON 6.8K JA 1/8W				1
R125	401 032 6808	CARBON 7.5K JA 1/8W				1
R126	401 028 4702	CARBON 1M JA 1/8W				1
R127	401 031 4508	CARBON 430 JA 1/8W				1
R128	401 031 2405	CARBON 3.9K JA 1/8W				1
R129	401 030 4202	CARBON 2.7K JA 1/8W				1
R130	401 032 4606	CARBON 6.8K JA 1/8W				1
R131	401 032 4002	CARBON 680 JA 1/8W				1
R132	401 032 2909	CARBON 6.2K JA 1/8W				1
R133	401 030 9207	CARBON 3.3K JA 1/8W				1
R134	401 030 4707	CARBON 27K JA 1/8W				1
R135	401 028 3705	CARBON 10K JA 1/8W				1
R136	401 012 5708	CARBON 1K JA 1/4W				1
R138	401 030 4707	CARBON 27K JA 1/8W				1
R139	401 030 0709	CARBON 22K JA 1/8W				1
R140	401 029 9706	CARBON 220 JA 1/8W				1
R141	401 028 4207	CARBON 100K JA 1/8W				1
R142	401 028 3200	CARBON 1K JA 1/8W				1
R143	401 030 9702	CARBON 33K JA 1/8W				1
R144	401 012 5708	CARBON 1K JA 1/4W				1
R145	401 029 0406	CARBON 150 JA 1/8W				1
R146	401 028 2609	CARBON 100 JA 1/8W				1
R147	401 029 9102	CARBON 22 JA 1/8W				1
R148	401 031 0203	CARBON 330K JA 1/8W				1

Ref. No.	Part No.	Description	Q'ty
R149	401 030 9207	CARBON 3.3K JA 1/8W	1
R150	401 030 4707	CARBON 27K JA 1/8W	1
R151	401 028 4207	CARBON 100K JA 1/8W	1
R152	401 031 2801	CARBON 39K JA 1/8W	1
R153	401 030 9702	CARBON 33K JA 1/8W	1
R154	401 031 6601	CARBON 4.7K JA 1/8W	1
R155	401 030 4202	CARBON 2.7K JA 1/8W	1
R156	401 030 4202	CARBON 2.7K JA 1/8W	1
R157	401 030 8705	CARBON 330 JA 1/8W	1
R158	401 030 3700	CARBON 270 JA 1/8W	1
R159	401 032 0103	CARBON 560 JA 1/8W	1
R160	401 030 0709	CARBON 22K JA 1/8W	1
R161	401 030 0204	CARBON 2.2K JA 1/8W	1
R162	401 031 6601	CARBON 4.7K JA 1/8W	1
R163	401 029 1502	CARBON 15K JA 1/8W	1
R165	401 031 2801	CARBON 39K JA 1/8W	1
R166	401 029 1502	CARBON 15K JA 1/8W	1
R167	401 030 0204	CARBON 2.2K JA 1/8W	1
R168	401 030 0709	CARBON 22K JA 1/8W	1
R201	401 032 0608	CARBON 5.6K JA 1/8W	1
R202	401 029 9102	CARBON 22 JA 1/8W	1
R203	401 028 8106	CARBON 120K JA 1/8W	1
R204	401 030 4202	CARBON 2.7K JA 1/8W	1
R205	401 031 2405	CARBON 3.9K JA 1/8W	1
R206	401 028 3705	CARBON 10K JA 1/8W	1
R207	401 029 9706	CARBON 220 JA 1/8W	1
R208	401 032 0608	CARBON 5.6K JA 1/8W	1
R209	401 029 9102	CARBON 22 JA 1/8W	1
R210	401 029 2004	CARBON 150K JA 1/8W	1
R211	401 030 4202	CARBON 2.7K JA 1/8W	1
R212	401 031 2405	CARBON 3.9K JA 1/8W	1
R213	401 031 6601	CARBON 4.7K JA 1/8W	1
R214	401 031 6601	CARBON 4.7K JA 1/8W	1
R215	401 029 1502	CARBON 15K JA 1/8W	1
R216	401 029 1502	CARBON 15K JA 1/8W	1
R217	401 029 1502	CARBON 15K JA 1/8W	1
R218	401 031 2405	CARBON 3.9K JA 1/8W	1
R219	401 031 2405	CARBON 3.9K JA 1/8W	1
R220	401 018 4903	CARBON 33K JA 1/4W	1
R221	401 032 4606	CARBON 6.8K JA 1/8W	1
R222	401 030 0204	CARBON 2.2K JA 1/8W	1
R223	401 032 8703	CARBON 8.2K JA 1/8W	1
R224	401 032 4606	CARBON 6.8K JA 1/8W	1
R225	401 032 6808	CARBON 7.5K JA 1/8W	1
R226	401 028 4702	CARBON 1M JA 1/8W	1
R227	401 031 4508	CARBON 430 JA 1/8W	1
R228	401 031 2405	CARBON 3.9K JA 1/8W	1
R229	401 030 4202	CARBON 2.7K JA 1/8W	1
R230	401 032 4606	CARBON 6.8K JA 1/8W	1
R231	401 032 4002	CARBON 680 JA 1/8W	1
R232	401 032 2909	CARBON 6.2K JA 1/8W	1
R233	401 030 9207	CARBON 3.3K JA 1/8W	1
R234	401 030 4707	CARBON 27K JA 1/8W	1
R235	401 028 3705	CARBON 10K JA 1/8W	1
R236	401 028 3200	CARBON 1K JA 1/8W	1
R238	401 030 4707	CARBON 27K JA 1/8W	1
R239	401 016 4806	CARBON 22K JA 1/4W	1
R240	401 029 9706	CARBON 220 JA 1/8W	1
R241	401 028 4207	CARBON 100K JA 1/8W	1
R242	401 028 3200	CARBON 1K JA 1/8W	1
R243	401 030 9702	CARBON 33K JA 1/8W	1
R244	401 012 5708	CARBON 1K JA 1/4W	1
R245	401 029 0406	CARBON 150 JA 1/8W	1
R246	401 028 2609	CARBON 100 JA 1/8W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R247	401 029 9102	CARBON 22 JA 1/8W	1
R248	401 031 0203	CARBON 330K JA 1/8W	1
R249	401 030 9207	CARBON 3.3K JA 1/8W	1
R250	401 030 4707	CARBON 27K JA 1/8W	1
R251	401 028 4207	CARBON 100K JA 1/8W	1
R252	401 031 2801	CARBON 39K JA 1/8W	1
R253	401 030 9702	CARBON 33K JA 1/8W	1
R254	401 031 6601	CARBON 4.7K JA 1/8W	1
R255	401 030 4202	CARBON 2.7K JA 1/8W	1
R256	401 030 4202	CARBON 2.7K JA 1/8W	1
R257	401 030 8705	CARBON 330 JA 1/8W	1
R258	401 030 3700	CARBON 270 JA 1/8W	1
R259	401 032 0103	CARBON 560 JA 1/8W	1
R260	401 030 0709	CARBON 22K JA 1/8W	1
R261	401 030 0204	CARBON 2.2K JA 1/8W	1
R262	401 031 6601	CARBON 4.7K JA 1/8W	1
R263	401 029 1502	CARBON 15K JA 1/8W	1
R265	401 031 2801	CARBON 39K JA 1/8W	1
R266	401 029 1502	CARBON 15K JA 1/8W	1
R267	401 030 0204	CARBON 2.2K JA 1/8W	1
R268	401 030 0709	CARBON 22K JA 1/8W	1
R301	401 016 2208	CARBON 220 JA 1/4W	1
R302	401 018 2800	CARBON 330 JA 1/4W	1
R303	401 028 3705	CARBON 10K JA 1/8W	1
R304	401 028 3705	CARBON 10K JA 1/8W	1
R305	401 021 1906	CARBON 560 JA 1/4W	1
R306	401 028 3705	CARBON 10K JA 1/8W	1
R307	401 028 3705	CARBON 10K JA 1/8W	1
R308	401 018 2800	CARBON 330 JA 1/4W	1
R309	401 014 1203	CARBON 15 JA 1/4W	1
R310	401 017 0807	CARBON 270 JA 1/4W	1
R311	401 028 3705	CARBON 10K JA 1/8W	1
R312	401 028 2104	CARBON 10 JA 1/8W	1
R313	401 029 9102	CARBON 22 JA 1/8W	1
R314	401 018 2800	CARBON 330 JA 1/4W	1
R315	401 028 3705	CARBON 10K JA 1/8W	1
R316	401 028 3705	CARBON 10K JA 1/8W	1
R317	401 012 4107	CARBON 100 JA 1/4W	1
R318	401 018 2800	CARBON 330 JA 1/4W	1
R319	401 031 2405	CARBON 3.9K JA 1/8W	1
R320	401 030 4202	CARBON 2.7K JA 1/8W	1
R321	401 032 5603	CARBON 680K JA 1/8W	1
R322	401 028 3705	CARBON 10K JA 1/8W	1
R323	401 028 2609	CARBON 100 JA 1/8W	1
R324	401 032 5603	CARBON 680K JA 1/8W	1
R325	401 028 3705	CARBON 10K JA 1/8W	1
R326	401 032 4002	CARBON 680 JA 1/8W	1
R327	401 028 3200	CARBON 1K JA 1/8W	1
R328	401 033 1000	CARBON 91K JA 1/8W	1
R329	401 028 3705	CARBON 10K JA 1/8W	1
R330	401 031 6601	CARBON 4.7K JA 1/8W	1
R331	401 031 6601	CARBON 4.7K JA 1/8W	1
R332	401 012 5708	CARBON 1K JA 1/4W	1
R333	401 030 9702	CARBON 33K JA 1/8W	1
R334	401 028 3705	CARBON 10K JA 1/8W	1
R335	401 028 4207	CARBON 100K JA 1/8W	1
R336	401 032 5108	CARBON 68K JA 1/8W	1
R337	401 028 4207	CARBON 100K JA 1/8W	1
R338	401 032 5108	CARBON 68K JA 1/8W	1
R339	401 028 4207	CARBON 100K JA 1/8W	1
R340	401 030 9702	CARBON 33K JA 1/8W	1
R341	401 030 0709	CARBON 22K JA 1/8W	1
R342	401 031 6601	CARBON 4.7K JA 1/8W	1
R343	401 031 7202	CARBON 47K JA 1/8W	1
R344	401 031 2405	CARBON 3.9K JA 1/8W	1

Ref. No.	Part No.	Description	Q'ty
	CONTROL P.C.B. ASSY		
62	141-0-1939-15821	Control P.C.B. Assy	1
	4-2359-79319	Connector 1P Assy (Mecha)	1
	⚠ 4-2352-01940	Fuse Clip	4
	131-2-6201-33600	Heatsink (for Q601)	1
	131-2-6201-33600	Heatsink (for Q602)	1
	111-2-6220-11100	Wire Wrap Terminal	10
	143-3-1903-00811	Screw, Brazier Hd. Tapping-B, +M3.0x8	2
CN1	4-2362-00770	Plug 2P	1
CN2	4-2362-00770	Plug 2P	1
CN3	4-2362-00770	Plug 2P	1
CN4	4-2362-00770	Plug 2P	1
CN5	4-2362-00770	Plug 2P	1
CN6	4-2369-74490	Plug 3P	1
CN7	4-2369-74490	Plug 3P	1
CN8	4-2369-71482	Plug 3P	1
CN9	4-2369-71482	Plug 3P	1
CN10	4-2369-73130	Connector 3P	1
CN11	4-2369-73140	Connector 4P	1
CN12	4-2369-73140	Connector 4P	1
CN13	4-2369-71851	Plug 4P	1
CN14	4-2369-71851	Plug 4P	1
CN15	4-2369-75330	Plug 4P	1
CN16	4-2369-75330	Plug 4P	1
CN17	4-2369-73150	Connector 5P	1
CN18	4-2369-73160	Connector 6P	1
CN19	4-2369-73690	Plug 9P	1
CN20	4-2359-76821	Connector 10P Assy	1
CN21	4-2359-76212	Connector 3P Assy	1
CN22	4-2362-00770	Plug 2P	1
CN23	4-2362-00770	Plug 2P	1
CN24	4-2369-73150	Connector 5P	1
CN25	4-2369-73130	Connector 3P	1
CN45	4-2359-77793	Connector 6P Assy	1
F1	⚠ 4-2349-70360	Fuse (T1.25A)	1
F2	⚠ 4-2349-70150	Fuse (T315mA)	1
J2	4-2359-75361	4P Pin Jack (Line)	1
L601	4-2539-70301	Micro Inductor (100μH)	1
NR41	4-2039-72630	Digitra, RN1205	1
NR42	4-2039-72500	Digitra, RN1203	1
NR43	4-2039-72500	Digitra, RN1203	1
NR44	4-2039-72640	Digitra, RN1202	1
NR45	4-2039-72500	Digitra, RN1203	1
NR46	4-2039-72640	Digitra, RN1202	1
NR47	4-2039-72640	Digitra, RN1202	1
NR51	4-2039-72630	Digitra, RN1205	1
NR52	4-2039-72500	Digitra, RN1203	1
NR53	4-2039-72500	Digitra, RN1203	1
NR61	4-2039-72640	Digitra, RN1202	1
NR62	4-2039-72640	Digitra, RN1202	1
NR63	4-2039-72640	Digitra, RN1202	1
NR71	4-2039-72640	Digitra, RN1202	1
P401	4-2229-76133	Potentiometer (B-220Ω)	1
P501	4-2229-76133	Potentiometer (B-220Ω)	1
P502	4-2229-76132	Potentiometer (B-33kΩ)	1
PR41	4-2039-72650	Digitra, RN2202	1
PR42	4-2039-72650	Digitra, RN2202	1
PR43	4-2039-72650	Digitra, RN2202	1
PR44	4-2039-72650	Digitra, RN2202	1
PR51	4-2039-72650	Digitra, RN2202	1
PR61	4-2039-72650	Digitra, RN2202	1
PR62	4-2039-72650	Digitra, RN2202	1
PR81	4-2039-72650	Digitra, RN2202	1
PR82	4-2039-72650	Digitra, RN2202	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
RA41	4-2219-70600	RM8-103J (10kΩx8)	1
RA42	4-2219-71470	Resistor (22kΩx4)	1
RA43	4-2219-71330	Resistor (22kΩx3)	1
RA51	4-2219-70600	RM8-103J (10kΩx8)	1
RA52	4-2219-71330	Resistor (22kΩx3)	1
D401	202-5-1410-00110	Diode, GMA 01	1
D402	202-5-1410-00110	Diode, GMA 01	1
D403	202-5-1410-00110	Diode, GMA 01	1
D404	202-5-1410-00110	Diode, GMA 01	1
D405	202-5-3210-05111	Zener Diode, GZA5.1X	1
D406	202-5-1410-00110	Diode, GMA 01	1
D407	202-5-1410-00110	Diode, GMA 01	1
D408	202-5-2810-44210	Diode, DS 442	1
D409	202-5-1410-00110	Diode, GMA 01	1
D410	202-5-2810-44210	Diode, DS 442	1
D411	202-5-2810-44210	Diode, DS 442	1
D412	202-5-2810-44210	Diode, DS 442	1
D413	202-5-2810-44210	Diode, DS 442	1
D414	202-5-2810-44210	Diode, DS 442	1
D415	202-5-1410-00110	Diode, GMA 01	1
D416	202-5-1410-00110	Diode, GMA 01	1
D417	202-5-1410-00110	Diode, GMA 01	1
D418	202-5-2810-44210	Diode, DS 442	1
D419	202-5-2810-44210	Diode, DS 442	1
D420	202-5-1410-00110	Diode, GMA 01	1
D421	202-5-2810-44210	Diode, DS 442	1
D422	202-5-1410-00110	Diode, GMA 01	1
D423	202-5-1410-00110	Diode, GMA 01	1
D424	202-5-1410-00110	Diode, GMA 01	1
D425	202-5-1410-00110	Diode, GMA 01	1
D426	202-5-1410-00110	Diode, GMA 01	1
D427	202-5-2810-44210	Diode, DS 442	1
D428	202-5-2810-44210	Diode, DS 442	1
D429	202-5-1410-00110	Diode, GMA 01	1
D430	202-5-1410-00110	Diode, GMA 01	1
D431	202-5-1410-00110	Diode, GMA 01	1
D432	202-5-1410-00110	Diode, GMA 01	1
D433	202-5-1410-00110	Diode, GMA 01	1
D434	202-5-2810-44210	Diode, DS 442	1
D435	202-5-1410-00110	Diode, GMA 01	1
D436	202-5-2810-44210	Diode, DS 442	1
D437	202-5-1410-00110	Diode, GMA 01	1
D438	202-5-1410-00110	Diode, GMA 01	1
D439	202-5-1410-00110	Diode, GMA 01	1
D440	202-5-1410-00110	Diode, GMA 01	1
D501	202-5-1410-00110	Diode, GMA 01	1
D502	202-5-1410-00110	Diode, GMA 01	1
D503	202-5-1410-00110	Diode, GMA 01	1
D504	202-5-1410-00110	Diode, GMA 01	1
D505	202-5-3210-05111	Zener Diode, GZA5.1X	1
D506	202-5-1410-00110	Diode, GMA 01	1
D507	202-5-2810-44210	Diode, DS 442	1
D508	202-5-1410-00110	Diode, GMA 01	1
D509	202-5-1410-00110	Diode, GMA 01	1
D510	202-5-2810-44210	Diode, DS 442	1
D511	202-5-2810-44210	Diode, DS 442	1
D512	202-5-2810-44210	Diode, DS 442	1
D513	202-5-1410-00110	Diode, GMA 01	1
D514	202-5-1410-00110	Diode, GMA 01	1
D515	202-5-1410-00110	Diode, GMA 01	1
D516	202-5-1410-00110	Diode, GMA 01	1
D517	202-5-1410-00110	Diode, GMA 01	1
D518	202-5-1410-00110	Diode, GMA 01	1
D519	202-5-1410-00110	Diode, GMA 01	1
D520	202-5-1410-00110	Diode, GMA 01	1
D521	202-5-1410-00110	Diode, GMA 01	1
D601	202-5-3210-06213	Zener Diode, GZA6.2Z	1
D602	202-5-3220-33011	Zener Diode, GZA 33X	1
D604	202-5-3210-12013	Zener Diode, GZA 12Z	1
D605	202-5-3210-09112	Zener Diode, GZA9.1Y	1
D606	202-5-3210-05112	Zener Diode, GZA5.1Y	1
D607	202-5-3210-05112	Zener Diode, GZA5.1Y	1
D608	202-5-3200-02721	Zener Diode, GZA2.7Y	1
D609	202-5-2540-13552	Diode, DS 135	1
D610	202-5-2540-13552	Diode, DS 135	1
D611	202-5-2540-13552	Diode, DS 135	1
D612	202-5-2540-13552	Diode, DS 135	1
D613	202-5-2490-18540	Diode, DS 185	1
D614	202-5-1410-00110	Diode, GMA 01	1
D615	202-5-1410-00110	Diode, GMA 01	1
D616	202-5-2810-44210	Diode, DS 442	1
D617	202-5-1410-00110	Diode, GMA 01	1
D618	202-5-2810-44210	Diode, DS 442	1
D619	202-5-1410-00110	Diode, GMA 01	1
D620	202-5-1410-00110	Diode, GMA 01	1
D621	202-5-1410-00110	Diode, GMA 01	1
D622	202-5-1410-00110	Diode, GMA 01	1
D623	202-5-1410-00110	Diode, GMA 01	1
D624	202-5-1410-00110	Diode, GMA 01	1
D625	202-5-1410-00110	Diode, GMA 01	1
D626	202-5-1410-00110	Diode, GMA 01	1
D627	202-5-1410-00110	Diode, GMA 01	1
D628	202-5-1410-00110	Diode, GMA 01	1
D629	202-5-2810-44210	Diode, DS 442	1
D630	202-5-1410-00110	Diode, GMA 01	1
D631	202-5-1410-00110	Diode, GMA 01	1
D632	202-5-1410-00110	Diode, GMA 01	1
D633	202-5-1410-00110	Diode, GMA 01	1
D701	202-5-2810-44210	Diode, DS 442	1
D702	202-5-1410-00110	Diode, GMA 01	1
D703	202-5-1410-00110	Diode, GMA 01	1
D705	202-5-1410-00110	Diode, GMA 01	1
D706	202-5-1410-00110	Diode, GMA 01	1
D707	202-5-3200-02721	Zener Diode, GZA2.7Y	1
D708	202-5-1410-00110	Diode, GMA 01	1
D709	202-5-1410-00110	Diode, GMA 01	1
D710	202-5-1410-00110	Diode, GMA 01	1
D712	202-5-1410-00110	Diode, GMA 01	1
D801	202-5-2810-44210	Diode, DS 442	1
D802	202-5-2810-44210	Diode, DS 442	1
DA71	4-2029-75070	Diode, DAN209S	1
IC41	4-2069-73350	IC, BA 6109	1
IC42	206-5-1296-32410	IC, LA 6324	1
IC43	4-2069-70312	IC, TC 4011 BP	1
IC44	4-2069-74470	IC, TD62554S	1
IC45	4-2069-74480	IC, TD62551S	1
IC46	208-5-6006-402347	IC, LM6402-347	1
IC51	4-2069-73350	IC, BA 6109	1
IC52	206-5-1296-32410	IC, LA 6324	1
IC53	206-5-3285-52210	IC, LA 5522	1
IC56	208-5-6006-402347	IC, LM6402-347	1
IC61	4-2069-74510	IC, TC 4012 BP	1
IC62	206-5-9494-08110	IC, LC 4081 B	1
IC63	4-2069-70312	IC, TC 4011 BP	1
IC64	4-2069-70312	IC, TC 4011 BP	1
IC65	4-2069-74500	IC, TC 4082 BP	1
IC66	4-2069-74480	IC, TD62551S	1
IC71	4-2069-75230	IC, TMP 4270N 1	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
IC72	4-2069-70312	IC, TC 4011 BP	1
IC73	4-2069-71940	IC, TC 4069 UBP	1
Q401	203-5-5000-53660	Transistor, 2SC 536	1
Q402	203-5-5000-53660	Transistor, 2SC 536	1
Q403	203-5-5000-53660	Transistor, 2SC 536	1
Q404	203-5-6850-40070	Transistor, 2SD 400	1
Q405	203-5-6850-40070	Transistor, 2SD 400	1
Q406	4-2039-72240	Transistor, 2SA 562	1
Q407	4-2039-72240	Transistor, 2SA 562	1
Q408	4-2039-72230	Transistor, 2SC 1959	1
Q409	4-2039-72230	Transistor, 2SC 1959	1
Q410	203-5-5000-53660	Transistor, 2SC 536	1
Q411	4-2039-71420	Transistor, 2SD 1450	1
Q412	4-2039-72230	Transistor, 2SC 1959	1
Q413	203-5-5000-53660	Transistor, 2SC 536	1
Q414	203-5-5000-53660	Transistor, 2SC 536	1
Q415	203-5-7200-60860	Transistor, 2SA 608	1
Q416	203-5-7200-60860	Transistor, 2SA 608	1
Q417	203-5-5000-53660	Transistor, 2SC 536	1
Q418	203-5-5000-53660	Transistor, 2SC 536	1
Q501	203-5-5000-53660	Transistor, 2SC 536	1
Q502	203-5-5000-53660	Transistor, 2SC 536	1
Q503	203-5-5000-53660	Transistor, 2SC 536	1
Q504	203-5-6850-40070	Transistor, 2SD 400	1
Q505	203-5-6850-40070	Transistor, 2SD 400	1
Q506	4-2039-72240	Transistor, 2SA 562	1
Q507	4-2039-72240	Transistor, 2SA 562	1
Q508	4-2039-72230	Transistor, 2SC 1959	1
Q509	4-2039-72230	Transistor, 2SC 1959	1
Q510	203-5-5000-53660	Transistor, 2SC 536	1
Q511	4-2039-71420	Transistor, 2SD 1450	1
Q512	4-2039-72230	Transistor, 2SC 1959	1
Q513	203-5-5000-53660	Transistor, 2SC 536	1
Q601	4-2039-70600	Transistor, 2SC 1846	1
Q602	TTT--2SD8-80-G	Transistor, 2SD 880	1
Q603	TTT--2SD8-80-G	Transistor, 2SD 880	1
Q604	4-2039-70600	Transistor, 2SC 1846	1
Q605	203-5-5000-53660	Transistor, 2SC 536	1
Q606	203-5-5000-53660	Transistor, 2SC 536	1
Q607	203-5-5000-53660	Transistor, 2SC 536	1
Q608	203-5-5000-53660	Transistor, 2SC 536	1
Q609	203-5-5000-53660	Transistor, 2SC 536	1
Q610	203-5-5000-53660	Transistor, 2SC 536	1
Q611	203-5-5000-53660	Transistor, 2SC 536	1
Q612	203-5-7200-60860	Transistor, 2SA 608	1
Q701	203-5-5000-53660	Transistor, 2SC 536	1
Q702	203-5-5000-53660	Transistor, 2SC 536	1
C1	4-2539-70711	CSB-400P Resonator	1
C2	4-2279-70110	Ceramic OSC 2MHz	1
C401	CM4-7-3500-K00SV	Mylar 0.047μF 50V ±10%	1
C402	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C403	CC1-0-4500-ZG00C	Ceramic 0.1μF 50V +80,-20%	1
C404	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C405	CD4-7-7100-0006V	Electrolytic 470μF 10V	1
C406	CD3-3-6160-0001V	Electrolytic 33μF 16V	1
C407	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C408	CC1-5-1500-KE00C	Ceramic 150pF 50V ±10%	1
C409	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C410	CD4-7-5250-0001V	Electrolytic 4.7μF 25V	1
C411	CD3-3-6160-0001V	Electrolytic 33μF 16V	1
C413	CC4-7-3500-ZG00C	Ceramic 0.047μF 50V +80,-20%	1
C414	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C416	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C417	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C418	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C501	CM4-7-3500-K00SV	Mylar 0.047μF 50V ±10%	1
C502	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C503	CC1-0-4500-ZG00C	Ceramic 0.1μF 50V +80,-20%	1
C504	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C505	CD4-7-7100-0006V	Electrolytic 470μF 10V	1
C506	CD3-3-6160-0001V	Electrolytic 33μF 16V	1
C507	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C508	CC2-2-1500-KE00C	Ceramic 220pF 50V ±10%	1
C509	CC2-2-1500-KE00C	Ceramic 220pF 50V ±10%	1
C510	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C511	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C512	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C513	CD1-0-4500-0001V	Electrolytic 0.1μF 50V	1
C514	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C601	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
C602	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
C603	CD2-2-8250-0001V	Electrolytic 2200μF 25V	1
C604	CD4-7-7500-0001V	Electrolytic 470μF 50V	1
C606	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C607	CD2-2-7350-0006V	Electrolytic 220μF 35V	1
C608	CD2-2-7160-0006V	Electrolytic 220μF 16V	1
C609	CD1-0-7160-0001V	Electrolytic 100μF 16V	1
C610	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C611	CD1-0-7160-0001V	Electrolytic 100μF 16V	1
C612	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C613	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C614	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1
C616	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C617	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C618	CC2-2-3500-ZG00C	Ceramic 0.022μF 50V +80,-20%	1
C620	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C621	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C622	CD1-0-763A-0001V	Electrolytic 100μF 6.3V	1
C623	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C624	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C625	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C626	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C627	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C628	CD3-3-6100-0001V	Electrolytic 33μF 10V	1
C629	CD2-2-6160-0001V	Electrolytic 22μF 16V	1
C630	CD1-0-763A-0001V	Electrolytic 100μF 6.3V	1
C631	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1
C632	CD3-3-6100-0001V	Electrolytic 33μF 10V	1
C633	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C634	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C635	CD1-0-763A-0001V	Electrolytic 100μF 6.3V	1
C636	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C637	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C638	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C639	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C640	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C641	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C642	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C643	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C645	CD4-7-6160-0001V	Electrolytic 47μF 16V	1
C701	CC4-7-1500-KE00C	Ceramic 470pF 50V ±10%	1
C702	CC6-8-0500-KD00C	Ceramic 68pF 50V ±10%	1
C703	CC6-8-0500-KD00C	Ceramic 68pF 50V ±10%	1
C704	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C705	CD4-7-663A-0001V	Electrolytic 47μF 6.3V	1
C706	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C707	CD4-7-5500-0001V	Electrolytic 4.7μF 50V	1
C708	CD2-2-6160-0001V	Electrolytic 22μF 16V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
C709	CD4-7-5250-0001V	Electrolytic 4.7µF 25V	1
C710	CD4-7-663A-0001V	Electrolytic 47µF 6.3V	1
C711	CD2-2-6160-0001V	Electrolytic 22µF 16V	1
C712	CD2-2-6160-0001V	Electrolytic 22µF 16V	1
C713	CC1-0-3500-ZG00C	Ceramic 0.01µF 50V +80,-20%	1
C714	CD1-0-6160-0001V	Electrolytic 10µF 16V	1
C715	CD4-7-663A-0001V	Electrolytic 47µF 6.3V	1
C716	CD4-7-663A-0001V	Electrolytic 47µF 6.3V	1
C717	CB2-2-6100-0000V	None-polar 22µF 10V	1
R169	401 030 4707	CARBON 27K JA 1/8W	1
R269	401 030 4707	CARBON 27K JA 1/8W	1
R401	401 028 3705	CARBON 10K JA 1/8W	1
R402	401 031 7707	CARBON 470K JA 1/8W	1
R403	401 028 4207	CARBON 100K JA 1/8W	1
R404	401 029 2004	CARBON 150K JA 1/8W	1
R405	401 030 1300	CARBON 220K JA 1/8W	1
R406	401 029 1502	CARBON 15K JA 1/8W	1
R407	401 021 6703	CARBON 6.8 JA 1/4W	1
R408	401 031 6106	CARBON 470 JA 1/8W	1
R409	401 028 3200	CARBON 1K JA 1/8W	1
R410	401 028 3705	CARBON 10K JA 1/8W	1
R411	401 028 3705	CARBON 10K JA 1/8W	1
R412	401 030 0204	CARBON 2.2K JA 1/8W	1
R413	401 030 0204	CARBON 2.2K JA 1/8W	1
R414	401 030 0204	CARBON 2.2K JA 1/8W	1
R415	401 030 0204	CARBON 2.2K JA 1/8W	1
R416	401 032 0103	CARBON 560 JA 1/8W	1
R417	401 032 1100	CARBON 56K JA 1/8W	1
R418	401 028 2609	CARBON 100 JA 1/8W	1
R419	401 013 6407	CARBON 12K JA 1/4W	1
R420	401 028 4207	CARBON 100K JA 1/8W	1
R421	401 028 3705	CARBON 10K JA 1/8W	1
R422	401 029 4503	CARBON 180 JA 1/8W	1
R423	401 032 8208	CARBON 820 JA 1/8W	1
R424	401 028 3705	CARBON 10K JA 1/8W	1
R425	401 028 3705	CARBON 10K JA 1/8W	1
R426	401 032 4002	CARBON 680 JA 1/8W	1
R427	401 031 6106	CARBON 470 JA 1/8W	1
R428	401 033 0706	CARBON 9.1K JA 1/8W	1
R429	401 028 3705	CARBON 10K JA 1/8W	1
R430	401 028 3705	CARBON 10K JA 1/8W	1
R431	401 028 3200	CARBON 1K JA 1/8W	1
R432	401 028 4207	CARBON 100K JA 1/8W	1
R433	401 028 3705	CARBON 10K JA 1/8W	1
R434	401 031 2405	CARBON 3.9K JA 1/8W	1
R435	401 031 2405	CARBON 3.9K JA 1/8W	1
R436	401 030 0204	CARBON 2.2K JA 1/8W	1
R437	401 032 0608	CARBON 5.6K JA 1/8W	1
R438	401 028 3200	CARBON 1K JA 1/8W	1
R439	401 031 6601	CARBON 4.7K JA 1/8W	1
R440	401 028 4702	CARBON 1M JA 1/8W	1
R441	401 028 3705	CARBON 10K JA 1/8W	1
R442	401 016 4806	CARBON 22K JA 1/4W	1
R443	401 022 1905	CARBON 680 JA 1/4W	1
R444	401 013 5301	CARBON 1.2K JA 1/4W	1
R445	401 028 2609	CARBON 100 JA 1/8W	1
R446	401 031 1903	CARBON 390 JA 1/8W	1
R447	4-2219-71431	LT Resistor 820 OHM	1
R448	401 032 4606	CARBON 6.8K JA 1/8W	1
R449	401 028 3705	CARBON 10K JA 1/8W	1
R450	401 028 3705	CARBON 10K JA 1/8W	1
R451	401 030 0709	CARBON 22K JA 1/8W	1
R452	401 031 2405	CARBON 3.9K JA 1/8W	1
R453	401 030 9702	CARBON 33K JA 1/8W	1

Ref. No.	Part No.	Description	Q'ty
R454	401 028 7604	CARBON 12K JA 1/8W	1
R455	401 032 0608	CARBON 5.6K JA 1/8W	1
R456	401 030 0709	CARBON 22K JA 1/8W	1
R457	401 028 7604	CARBON 12K JA 1/8W	1
R458	401 032 0608	CARBON 5.6K JA 1/8W	1
R459	401 028 4207	CARBON 100K JA 1/8W	1
R460	401 030 4707	CARBON 27K JA 1/8W	1
R461	401 032 4606	CARBON 6.8K JA 1/8W	1
R462	401 030 4707	CARBON 27K JA 1/8W	1
R463	401 032 0608	CARBON 5.6K JA 1/8W	1
R464	401 028 7604	CARBON 12K JA 1/8W	1
R465	401 028 7604	CARBON 12K JA 1/8W	1
R466	401 030 9702	CARBON 33K JA 1/8W	1
R467	401 030 4707	CARBON 27K JA 1/8W	1
R468	401 030 9702	CARBON 33K JA 1/8W	1
R469	401 028 3200	CARBON 1K JA 1/8W	1
R470	401 030 9702	CARBON 33K JA 1/8W	1
R471	401 029 1502	CARBON 15K JA 1/8W	1
R472	401 028 4207	CARBON 100K JA 1/8W	1
R473	401 032 1100	CARBON 56K JA 1/8W	1
R474	401 029 5500	CARBON 18K JA 1/8W	1
R475	401 029 1502	CARBON 15K JA 1/8W	1
R476	401 032 0608	CARBON 5.6K JA 1/8W	1
R477	401 031 2405	CARBON 3.9K JA 1/8W	1
R478	401 030 9207	CARBON 3.3K JA 1/8W	1
R479	401 032 0608	CARBON 5.6K JA 1/8W	1
R480	401 028 3200	CARBON 1K JA 1/8W	1
R481	401 028 4702	CARBON 1M JA 1/8W	1
R482	401 031 7202	CARBON 47K JA 1/8W	1
R483	401 028 7604	CARBON 12K JA 1/8W	1
R484	401 016 3809	CARBON 2.2K JA 1/4W	1
R485	401 031 2405	CARBON 3.9K JA 1/8W	1
R486	401 028 3705	CARBON 10K JA 1/8W	1
R487	401 031 2405	CARBON 3.9K JA 1/8W	1
R488	401 032 8703	CARBON 8.2K JA 1/8W	1
R490	401 012 8105	CARBON 100K JA 1/4W	1
R491	401 021 3009	CARBON 5.6K JA 1/4W	1
R492	401 030 0709	CARBON 22K JA 1/8W	1
R493	401 031 7202	CARBON 47K JA 1/8W	1
R494	401 018 4903	CARBON 33K JA 1/4W	1
R495	401 022 1905	CARBON 680 JA 1/4W	1
R496	401 030 9702	CARBON 33K JA 1/8W	1
R501	401 028 3705	CARBON 10K JA 1/8W	1
R502	401 031 7707	CARBON 470K JA 1/8W	1
R503	401 028 4207	CARBON 100K JA 1/8W	1
R504	401 029 2004	CARBON 150K JA 1/8W	1
R505	401 030 1300	CARBON 220K JA 1/8W	1
R506	401 029 1502	CARBON 15K JA 1/8W	1
R507	401 021 6703	CARBON 6.8 JA 1/4W	1
R508	401 031 6106	CARBON 470 JA 1/8W	1
R509	401 030 4202	CARBON 2.7K JA 1/8W	1
R510	401 028 3705	CARBON 10K JA 1/8W	1
R511	401 028 3705	CARBON 10K JA 1/8W	1
R512	401 030 0204	CARBON 2.2K JA 1/8W	1
R513	401 030 0204	CARBON 2.2K JA 1/8W	1
R514	401 030 0204	CARBON 2.2K JA 1/8W	1
R515	401 030 0204	CARBON 2.2K JA 1/8W	1
R516	401 031 4508	CARBON 430 JA 1/8W	1
R517	401 021 4105	CARBON 56K JA 1/4W	1
R518	401 012 4503	CARBON 100 JA 1/4W	1
R519	401 029 0901	CARBON 1.5K JA 1/8W	1
R520	401 028 4207	CARBON 100K JA 1/8W	1
R521	401 012 7009	CARBON 10K JA 1/4W	1
R522	401 029 4503	CARBON 180 JA 1/8W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R523	401 032 8208	CARBON 820 JA 1/8W	1
R524	401 028 3705	CARBON 10K JA 1/8W	1
R525	401 028 3705	CARBON 10K JA 1/8W	1
R526	401 022 1905	CARBON 680 JA 1/4W	1
R527	401 031 6106	CARBON 470 JA 1/8W	1
R528	401 033 0706	CARBON 9.1K JA 1/8W	1
R529	401 028 3705	CARBON 10K JA 1/8W	1
R530	401 028 3705	CARBON 10K JA 1/8W	1
R531	401 028 3200	CARBON 1K JA 1/8W	1
R532	401 028 4207	CARBON 100K JA 1/8W	1
R533	401 028 3705	CARBON 10K JA 1/8W	1
R534	401 031 2405	CARBON 3.9K JA 1/8W	1
R535	401 031 2405	CARBON 3.9K JA 1/8W	1
R536	401 030 0204	CARBON 2.2K JA 1/8W	1
R537	401 032 0608	CARBON 5.6K JA 1/8W	1
R538	401 012 5708	CARBON 1K JA 1/4W	1
R539	401 031 6601	CARBON 4.7K JA 1/8W	1
R540	401 028 4702	CARBON 1M JA 1/8W	1
R541	401 014 5201	CARBON 15K JA 1/4W	1
R542	401 029 1502	CARBON 15K JA 1/8W	1
R543	401 032 4002	CARBON 680 JA 1/8W	1
R544	401 032 4002	CARBON 680 JA 1/8W	1
R545	401 028 2609	CARBON 100 JA 1/8W	1
R546	401 031 1903	CARBON 390 JA 1/8W	1
R547	4-2219-71431	LT Resistor 820 OHM	1
R548	401 032 4606	CARBON 6.8K JA 1/8W	1
R549	401 028 3705	CARBON 10K JA 1/8W	1
R550	401 028 3705	CARBON 10K JA 1/8W	1
R551	401 030 0709	CARBON 22K JA 1/8W	1
R552	401 014 5201	CARBON 15K JA 1/4W	1
R553	401 031 6601	CARBON 4.7K JA 1/8W	1
R554	401 028 7604	CARBON 12K JA 1/8W	1
R555	401 028 4702	CARBON 1M JA 1/8W	1
R556	401 030 4202	CARBON 2.7K JA 1/8W	1
R557	401 030 9207	CARBON 3.3K JA 1/8W	1
R558	401 028 3705	CARBON 10K JA 1/8W	1
R559	401 030 0709	CARBON 22K JA 1/8W	1
R560	401 028 3200	CARBON 1K JA 1/8W	1
R561	401 028 2609	CARBON 100 JA 1/8W	1
R562	401 032 1100	CARBON 56K JA 1/8W	1
R563	401 032 0608	CARBON 5.6K JA 1/8W	1
R564	401 021 3009	CARBON 5.6K JA 1/4W	1
R565	401 028 4207	CARBON 100K JA 1/8W	1
R566	401 028 7109	CARBON 1.2K JA 1/8W	1
R567	401 028 3705	CARBON 10K JA 1/8W	1
R588	401 032 8703	CARBON 8.2K JA 1/8W	1
R601	401 021 1500	CARBON 560 JA 1/4W	1
R602	401 018 2404	CARBON 330 JA 1/4W	1
R603	401 021 1500	CARBON 560 JA 1/4W	1
R604	401 012 5708	CARBON 1K JA 1/4W	1
R605	401 032 4606	CARBON 6.8K JA 1/8W	1
R606	401 030 9702	CARBON 33K JA 1/8W	1
R607	401 028 4207	CARBON 100K JA 1/8W	1
R608	401 030 9702	CARBON 33K JA 1/8W	1
R609	401 028 7604	CARBON 12K JA 1/8W	1
R610	401 028 4207	CARBON 100K JA 1/8W	1
R611	401 030 4202	CARBON 2.7K JA 1/8W	1
R612	401 028 3705	CARBON 10K JA 1/8W	1
R613	401 028 3705	CARBON 10K JA 1/8W	1
R614	401 030 4202	CARBON 2.7K JA 1/8W	1
R615	401 031 7202	CARBON 47K JA 1/8W	1
R616	401 028 3200	CARBON 1K JA 1/8W	1
R617	401 031 2801	CARBON 39K JA 1/8W	1
R618	401 030 9702	CARBON 33K JA 1/8W	1
R619	401 028 3705	CARBON 10K JA 1/8W	1
R620	401 018 4903	CARBON 33K JA 1/4W	1
R621	401 020 2904	CARBON 47K JA 1/4W	1
R622	401 031 6601	CARBON 4.7K JA 1/8W	1
R623	401 032 1100	CARBON 56K JA 1/8W	1
R624	401 028 3705	CARBON 10K JA 1/8W	1
R625	401 031 7202	CARBON 47K JA 1/8W	1
R626	401 028 7604	CARBON 12K JA 1/8W	1
R627	401 031 7202	CARBON 47K JA 1/8W	1
R628	401 030 9702	CARBON 33K JA 1/8W	1
R629	401 030 9702	CARBON 33K JA 1/8W	1
R630	401 028 4207	CARBON 100K JA 1/8W	1
R631	401 032 1100	CARBON 56K JA 1/8W	1
R632	401 028 7604	CARBON 12K JA 1/8W	1
R633	401 031 7202	CARBON 47K JA 1/8W	1
R634	401 028 7604	CARBON 12K JA 1/8W	1
R635	401 031 7202	CARBON 47K JA 1/8W	1
R637	401 028 3705	CARBON 10K JA 1/8W	1
R638	401 032 0608	CARBON 5.6K JA 1/8W	1
R639	401 030 9702	CARBON 33K JA 1/8W	1
R640	401 029 0901	CARBON 1.5K JA 1/8W	1
R641	401 028 3705	CARBON 10K JA 1/8W	1
R642	401 029 1502	CARBON 15K JA 1/8W	1
R643	401 020 2003	CARBON 4.7K JA 1/4W	1
R644	401 020 2003	CARBON 4.7K JA 1/4W	1
R645	401 022 9000	CARBON 8.2 JA 1/4W	1
R646	401 028 3705	CARBON 10K JA 1/8W	1
R649	401 030 9702	CARBON 33K JA 1/8W	1
R701	401 028 2609	CARBON 100 JA 1/8W	1
R702	401 028 2609	CARBON 100 JA 1/8W	1
R703	401 028 2609	CARBON 100 JA 1/8W	1
R704	401 028 2609	CARBON 100 JA 1/8W	1
R705	401 028 3200	CARBON 1K JA 1/8W	1
R706	401 030 0709	CARBON 22K JA 1/8W	1
R707	401 028 3200	CARBON 1K JA 1/8W	1
R708	401 031 7707	CARBON 470K JA 1/8W	1
R709	401 030 9702	CARBON 33K JA 1/8W	1
R710	401 028 4207	CARBON 100K JA 1/8W	1
R711	401 031 7202	CARBON 47K JA 1/8W	1
R712	401 029 1502	CARBON 15K JA 1/8W	1
R713	401 018 2800	CARBON 330 JA 1/4W	1
R714	401 032 0608	CARBON 5.6K JA 1/8W	1
R715	401 029 1502	CARBON 15K JA 1/8W	1
R716	401 028 4207	CARBON 100K JA 1/8W	1
R717	401 029 1502	CARBON 15K JA 1/8W	1
R718	401 030 0709	CARBON 22K JA 1/8W	1
R719	401 030 0709	CARBON 22K JA 1/8W	1
R720	401 030 9702	CARBON 33K JA 1/8W	1
R721	401 030 9702	CARBON 33K JA 1/8W	1
R722	401 030 0709	CARBON 22K JA 1/8W	1
R723	401 028 3705	CARBON 10K JA 1/8W	1
R724	401 023 2802	CARBON 8.2K JA 1/4W	1
R725	401 028 4207	CARBON 100K JA 1/8W	1

TIMER P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
63	141-0-1939-15740	Timer P.C.B. Assy	1
CN10	4-2359-76662	Connector 3P Assy	1
SW19	4-2319-74200	Slide Switch (Timer Standby)	1

DIRECTION LED 1 P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
64	141-0-1939-15750	Direction LED 1 P.C.B. Assy	1
CN13	4-2359-79186	Connector 4P Assy	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R812	401 032 0608	CARBON 5.6K JA 1/8W	1
R813	401 028 3705	CARBON 10K JA 1/8W	1
R814	401 028 7604	CARBON 12K JA 1/8W	1
R815	401 028 3705	CARBON 10K JA 1/8W	1
R816	401 028 3705	CARBON 10K JA 1/8W	1
R817	401 028 3705	CARBON 10K JA 1/8W	1
R818	401 031 9206	CARBON 51K JA 1/8W	1
R819	401 031 6601	CARBON 4.7K JA 1/8W	1
R820	401 030 0709	CARBON 22K JA 1/8W	1
R901	401 029 0901	CARBON 1.5K JA 1/8W	1
R902	401 029 0901	CARBON 1.5K JA 1/8W	1
R903	401 029 0901	CARBON 1.5K JA 1/8W	1
R904	401 029 0901	CARBON 1.5K JA 1/8W	1
R905	401 029 0901	CARBON 1.5K JA 1/8W	1
RA81	4-2219-71540	Resistor (10kΩx8)	1
	LAMP P.C.B. ASSY		
71	141-0-1939-15850	Lamp P.C.B. Assy	1
	4-2359-79346	Connector 2P Assy	1
PL1	4-6129-70670	Lamp (8V, 105mA)	1
PL2	4-6129-70670	Lamp (8V, 105mA)	1
	SUB REMOCON P.C.B. ASSY		
72	141-0-1939-16691	Sub Rimocon P.C.B. Assy	1
	4-2372-00830	EC Terminal 1P	7
CN45	4-2369-73160	Connector 6P	1
CN99	4-2369-76010	Plug 5P	1
NR75	4-2039-72640	Digitra, RN1202	1
PR75	4-2039-72490	Digitra, RN2203	1
D720	202-5-1410-00110	Diode, GMA 01	1
DA72	4-2029-75070	Diode, DAN209S	1
IC74	206-5-8144-06610	IC, LC 4066BH	1
or	4-2069-71930	IC, TC 4066 BP	1
C720	CD1-0-5500-0001V	Electrolytic 1μF 50V	1
C721	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C722	CD4-7-663A-0001V	Electrolytic 47μF 6.3V	1
R730	401 028 7604	CARBON 12K JA 1/8W	1
R731	401 028 7604	CARBON 12K JA 1/8W	1
R732	401 028 4207	CARBON 100K JA 1/8W	1
R733	401 028 4207	CARBON 100K JA 1/8W	1
	PHOTO P.C.B. ASSY		
94	141-0-1939-15730	Photo P.C.B. Assy	1
	141-2-4539-06000	Washer Lever Connect	1
CN35	4-2359-77616	Connector 3P Assy	1
Q1	4-2039-72810	Photo Transister, NJL 5146 EBA	1

NOTES:

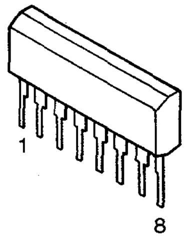
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

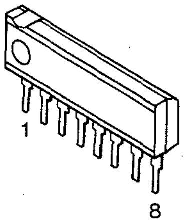
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

SEMICONDUCTOR LEAD IDENTIFICATION

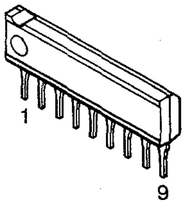
INTEGRATED CIRCUITS



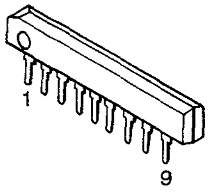
- M 5218 L



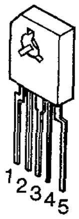
- BA 3302



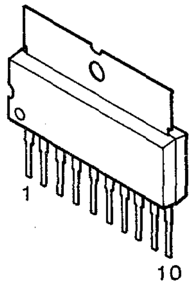
- BA 6138



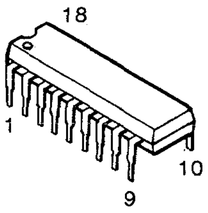
- TD 62554 S
- TD 62551 S



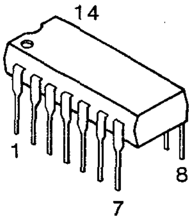
- LA 5522



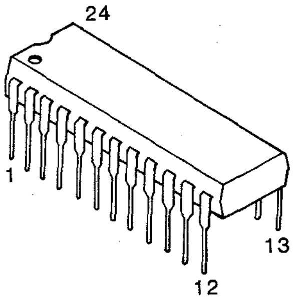
- BA 6109



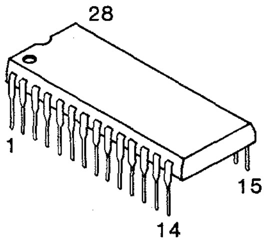
- LB 1290



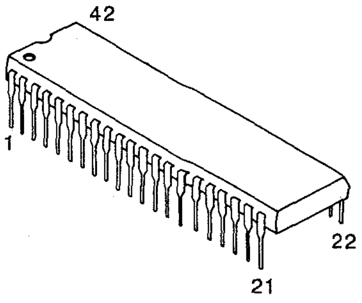
- LA 6324
- TC 4011 BP
- TC 4012 BP
- TC 4069 UBP
- TC 4082 BP
- LC 4066 B
- LC 4081 B



- TC 5054 P



- TMP 4270 N 1
- MSL 9359 RS



- LM 6402-347
- CX 20187

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
LD41	4-2029-73230	LED, LD 001 MG (FWD)	1
LD42	4-2029-73230	LED, LD 001 MG (REV)	1
LD43	4-2029-72890	LED, LD 101 VR (REC)	1

DIRECTION LED 2 P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
65	141-0-1939-15760	Direction LED 2 P.C.B. Assy	1
CN14	4-2359-79186	Connector 4P Assy	1
LD51	4-2029-73230	LED, LD 001 MG (FWD)	1
LD52	4-2029-73230	LED, LD 001 MG (REV)	1
LD53	4-2029-75080	LED, LD 101 DU (ASF)	1

HEADPHONE P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
66	141-0-1939-15770	Headphone P.C.B. Assy	1
CN33	4-2359-79257	Connector 3P Assy	1
J1	4-2359-77530	Jack 3P Slim	1

FUNCTION SWITCH 1 P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
67	141-0-1939-15780	Function Switch 1 P.C.B. Assy	1
SW1	4-2312-05801	Key Board Switch (Counter Reset)	1
SW2	4-2312-05801	Key Board Switch (Space Pause)	1
SW3	4-2312-05801	Key Board Switch (Rec Pause)	1
SW4	4-2312-05801	Key Board Switch (F.F)	1
SW5	4-2312-05801	Key Board Switch (Stope)	1
SW6	4-2312-05801	Key Board Switch (FWD Play)	1
SW7	4-2312-05801	Key Board Switch (REV Play)	1
SW8	4-2312-05801	Key Board Switch (REC)	1
SW9	4-2312-05801	Key Board Switch (REW)	1
	141-2-4729-05000	Staple 5	5
CN19	4-2359-77688	Connector 9P Assy	1
CN28	4-2359-76785	Connector 2P Assy	1
	4-2359-79420	Connector 1P Assy	1

FUNCTION SWITCH 2 P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
68	141-0-1939-15790	Function Switch 2 P.C.B. Assy	1
SW10	4-2312-05801	Key Board Switch (High Speed Dubbing)	1
SW11	4-2312-05801	Key Board Switch (Normal Speed Dubbing)	1
	141-2-4729-05000	Staple 5	1
CN11	4-2359-76740	Connector 4P Assy	1
CN22	4-2359-79341	Connector 2P Assy	1
CN37	4-2359-77658	Connector 4P Assy	1
SW17	4-2319-74200	Slide Switch (Direction Mode)	1
SW18	4-2319-74200	Slide Switch (Dolby NR)	1

FUNCTION SWITCH 3 P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
69	141-0-1939-15800	Function Switch 3 P.C.B. Assy	1
SW12	4-2312-05801	Key Board Switch (F.F)	1
SW13	4-2312-05801	Key Board Switch (Stop)	1
SW14	4-2312-05801	Key Board Switch (FWD Play)	1
SW15	4-2312-05801	Key Board Switch (REV Play)	1
SW16	4-2312-05801	Key Board Switch (REW)	1
	4-2359-79420	Connector 1P Assy	1
CN18	4-2359-79293	Connector 6P Assy	1

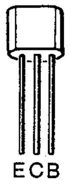
FL DISPLAY P.C.B. ASSY

Ref. No.	Part No.	Description	Q'ty
70	141-0-1939-15810	FL Display P.C.B. Assy	1
	141-2-3769-19200	Spacer LED	6
	141-2-4469-54900	Cushion Meter	2
	4-2149-70060	Digitron	1

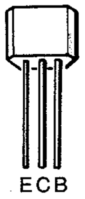
Ref. No.	Part No.	Description	Q'ty
CN23	4-2359-79340	Connector 2P Assy	1
CN24	131-0-4006-31411	Cord Assy	1
CN25	4-2359-79258	Connector 3P Assy	1
CN30	131-0-4006-31402	Cord Assy	1
CN31	4-2359-79259	Connector 3P Assy	1
CN32	131-0-4006-31400	Cord Assy	1
CN34	4-2359-77651	Connector 3P Assy	1
CN36	4-2359-79078	Connector 2P Assy	1
CN39	4-2359-78724	Connector 5P Assy	1
NR81	4-2039-72620	Digitra, RN1201	1
NR82	4-2039-72640	Digitra, RN1202	1
NR83	4-2039-72640	Digitra, RN1202	1
NR84	4-2039-72640	Digitra, RN1202	1
NR91	4-2039-72630	Digitra, RN1205	1
NR92	4-2039-72620	Digitra, RN1201	1
NR93	4-2039-72620	Digitra, RN1201	1
NR94	4-2039-72640	Digitra, RN1202	1
NR95	4-2039-72640	Digitra, RN1202	1
PR83	4-2039-72490	Digitra, RN2203	1
PR84	4-2039-72490	Digitra, RN2203	1
PR85	4-2039-72490	Digitra, RN2203	1
PR86	4-2039-72490	Digitra, RN2203	1
PR87	4-2039-72490	Digitra, RN2203	1
PR88	4-2039-72650	Digitra, RN2202	1
PR89	4-2039-72650	Digitra, RN2202	1
VR1	4-2229-75650	Slide Volume (A-50kΩ)	1
VR2	4-2229-76470	Slide Volume (W-200kΩ)	1
D803	202-5-3220-27013	Zener Diode, GZA 27Z	1
D901	202-5-1410-00110	Diode, GMA 01	1
D902	202-5-1410-00110	Diode, GMA 01	1
IC81	4-2069-75570	IC, TC 5054P	1
IC82	4-2069-75580	IC, MSL 9359 RS	1
IC83	4-2069-75560	IC, TD 62781AP	1
or	206-5-2621-29010	IC, LB 1290	1
LD91	DYY--SLB-72UR-	LED, SLB 72 UR 4 HL (Normal)	1
LD92	DYY--SLB-72UR-	LED, SLB 72 UR 4 HL (CrO_2)	1
LD93	DYY--SLB-72UR-	LED, SLB 72 UR 4 HL (Metal)	1
LD94	DYY--SLB-72GG-	LED, SLB 72 GG 4 HL (Dolby-C)	1
LD95	DYY--SLB-72UR-	LED, SLB 72 UR 4 HL (High)	1
LD96	DYY--SLB-72UR-	LED, SLB 72 UR 4 HL (Dubbing)	1
Q801	203-5-4570-73460	Transistor, 2SD 734	1
Q802	203-5-5000-53660	Transistor, 2SC 536	1
C801	CD1-0-6160-0002V	Electrolytic 10μF 16V	1
C802	CD4-7-6350-0001V	Electrolytic 47μF 35V	1
C803	CD2-2-6350-0001V	Electrolytic 22μF 35V	1
C804	CD4-7-5250-0002V	Electrolytic 4.7μF 25V	1
C805	CD3-3-5250-0002V	Electrolytic 3.3μF 25V	1
C806	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C807	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
C808	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1
C809	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1
C810	CM1-2-3500-J00BV	Mylar 0.012μF 50V ±5%	1
C812	CC1-0-3500-ZG00C	Ceramic 0.01μF 50V +80,-20%	1
R801	401 028 3200	CARBON 1K JA 1/8W	1
R802	401 030 0709	CARBON 22K JA 1/8W	1
R803	401 030 0709	CARBON 22K JA 1/8W	1
R804	401 031 9206	CARBON 51K JA 1/8W	1
R805	401 032 5108	CARBON 68K JA 1/8W	1
R806	401 032 5108	CARBON 68K JA 1/8W	1
R807	401 031 0203	CARBON 330K JA 1/8W	1
R808	401 029 5500	CARBON 18K JA 1/8W	1
R809	401 032 4002	CARBON 680 JA 1/8W	1
R810	401 031 6601	CARBON 4.7K JA 1/8W	1
R811	401 032 0608	CARBON 5.6K JA 1/8W	1

SEMICONDUCTOR LEAD IDENTIFICATION (Continued)

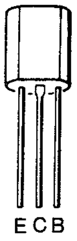
BI-POLAR TRANSISTORS



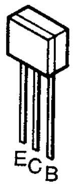
- 2SA 562
- 2SA 608
- 2SA 1016
- 2SC 536
- 2SC 1959
- 2SC 2274
- 2SC 3331
- 2SC 3708
- 2SD 734



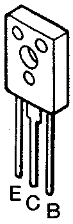
- 2SD 1012
- RN 1201
- RN 1202
- RN 1203
- RN 1205
- RN 2202
- RN 2203
- RN 2205



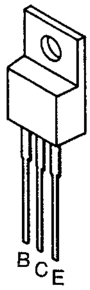
- 2SD 400



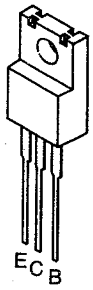
- 2SD 1450



- 2SC 1846

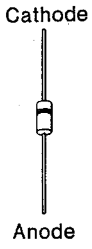


- 2SD 880

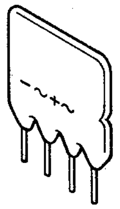


- 2SD 1666

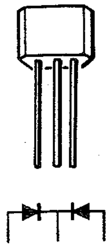
DIODES



- DS 135
- DS 442
- GMA 01
- GZA 2.7 Y
- GZA 5.1 X
- GZA 5.1 Y
- GZA 5.6 Z
- GZA 6.2 Z
- GZA 9.1 Y
- GZA 11 X
- GZA 11 Y
- GZA 12 Z
- GZA 15 Y
- GZA 33 X

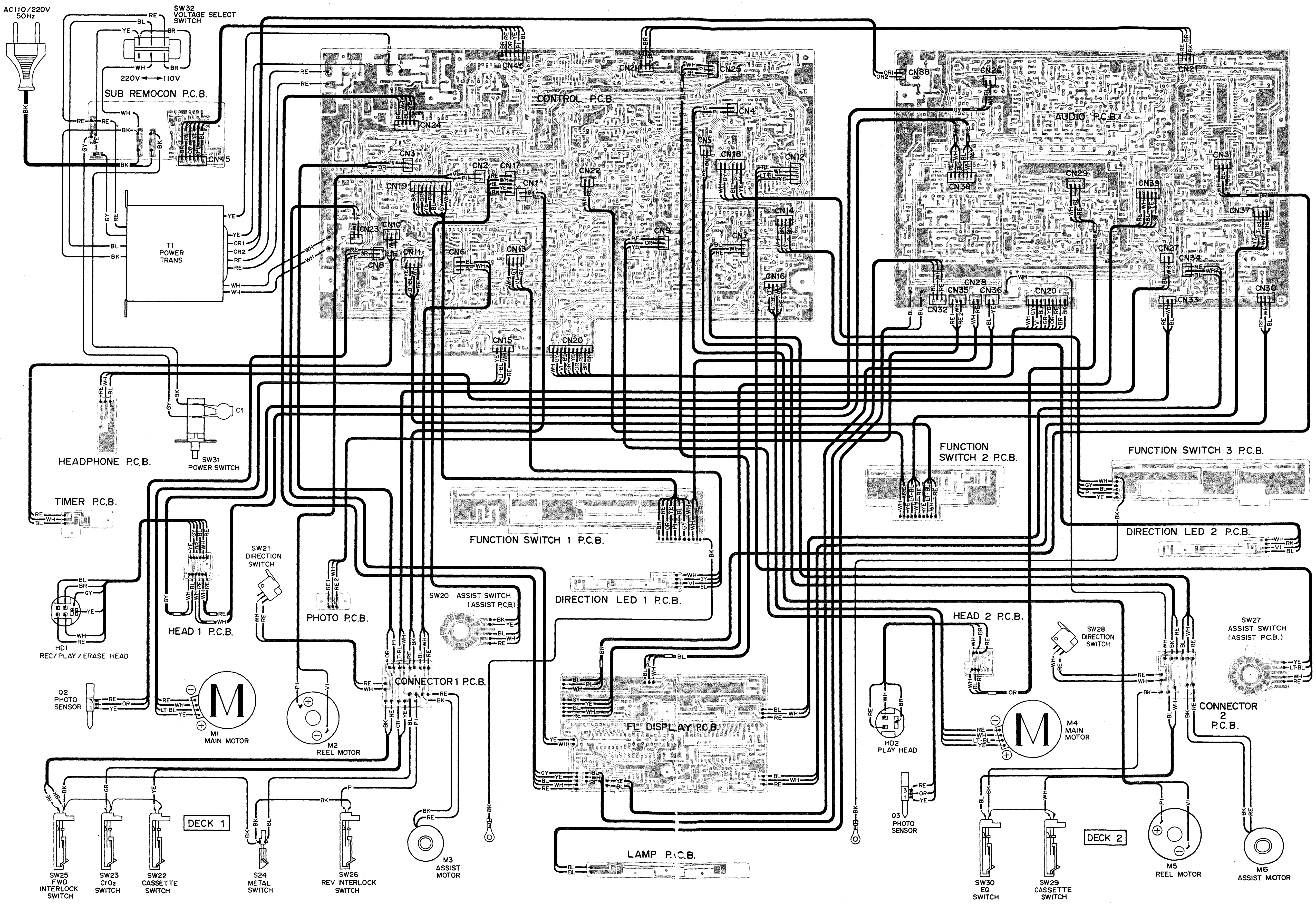


- DS 185

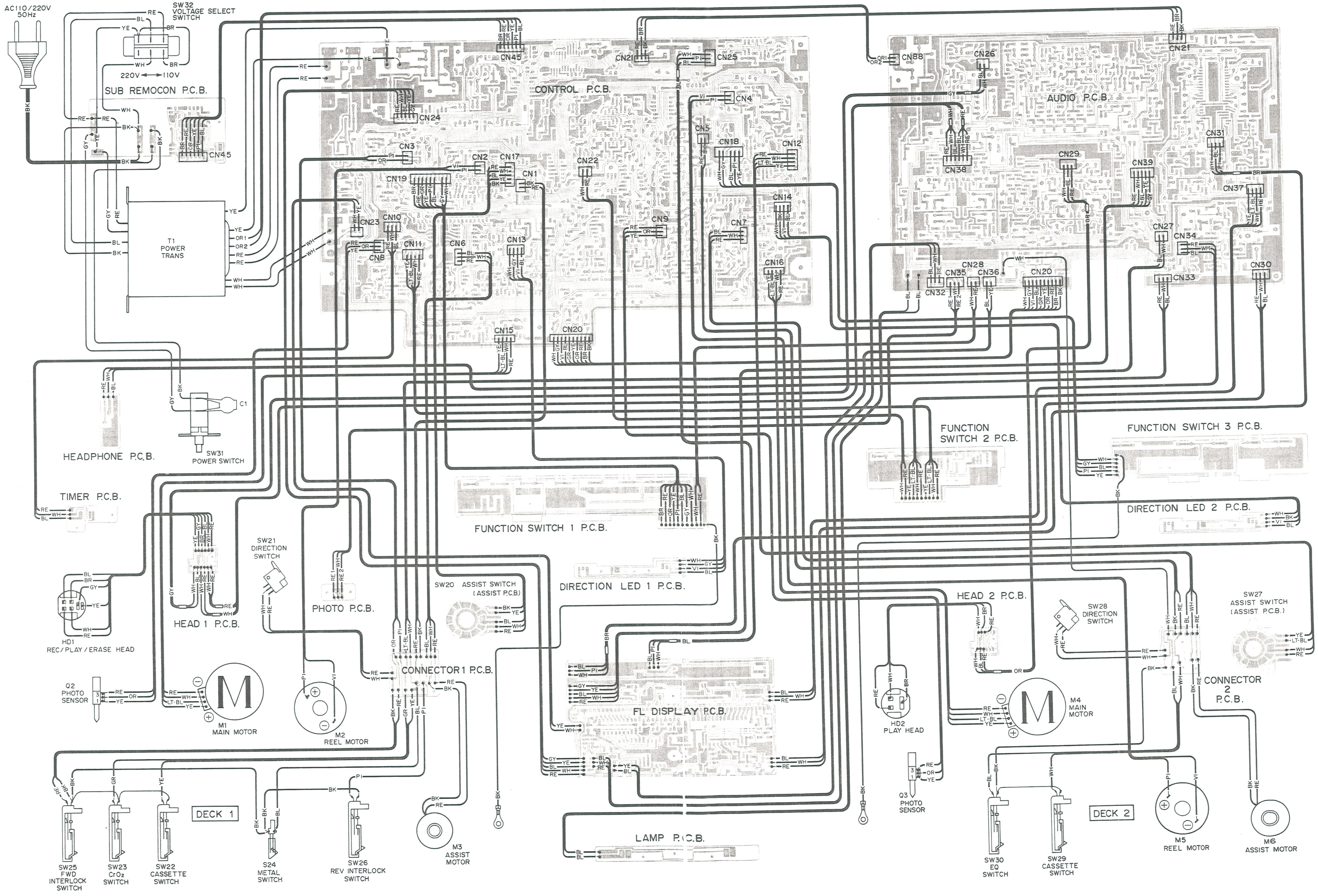


- DAN 209 S

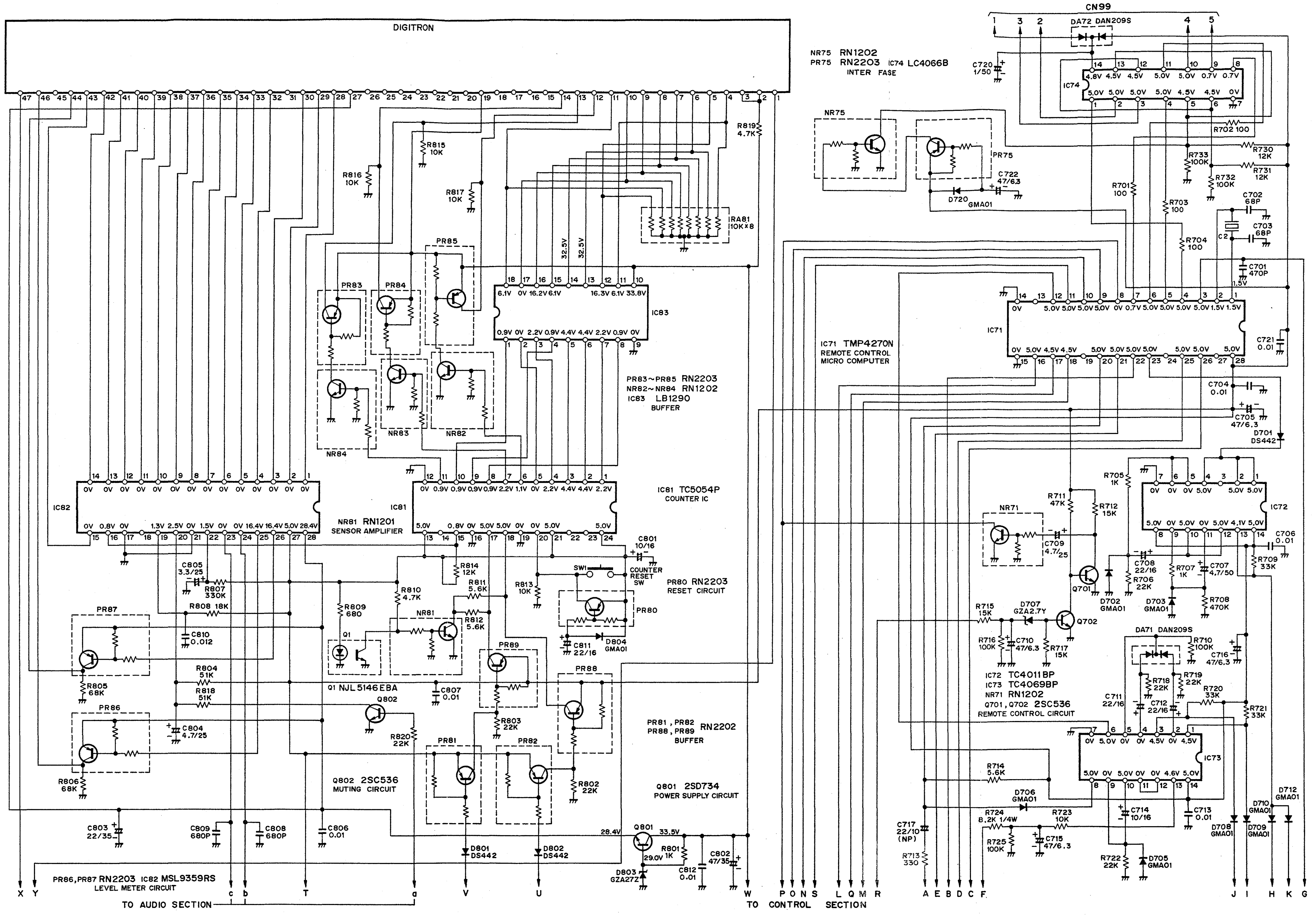
POINT TO POINT WIRING DIAGRAM


AC110/220V 50Hz
SW32 VOLTAGE SELECT SWITCH
220V ◄—► 110V
SUB REMOCON P.C.B.
CN45
T1 POWER TRANS
CONTROL P.C.B.
AUDIO P.C.B.
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN11
CN12
CN13
CN14
CN15
CN16
CN17
CN18
CN19
CN20
CN21
CN22
CN23
CN24
CN25
CN26
CN27
CN28
CN29
CN30
CN31
CN32
CN33
CN34
CN35
CN36
CN37
CN38
CN39
CN88
C1
HEADPHONE P.C.B.
SW31 POWER SWITCH
TIMER P.C.B.
FUNCTION SWITCH 1 P.C.B.
FUNCTION SWITCH 2 P.C.B.
FUNCTION SWITCH 3 P.C.B.
DIRECTION LED 1 P.C.B.
DIRECTION LED 2 P.C.B.
HD1 REC/PLAY/ERASE HEAD
HEAD 1 P.C.B.
SW21 DIRECTION SWITCH
PHOTO P.C.B.
SW20 ASSIST SWITCH (ASSIST P.C.B.)
CONNECTOR1 P.C.B.
Q2 PHOTO SENSOR
M1 MAIN MOTOR
M2 REEL MOTOR
FL DISPLAY P.C.B.
HEAD 2 P.C.B.
SW28 DIRECTION SWITCH
SW27 ASSIST SWITCH (ASSIST P.C.B.)
CONNECTOR 2 P.C.B.
HD2 PLAY HEAD
M4 MAIN MOTOR
DECK 1
SW25 FWD INTERLOCK SWITCH
SW23 CrO2 SWITCH
SW22 CASSETTE SWITCH
S24 METAL SWITCH
SW26 REV INTERLOCK SWITCH
M3 ASSIST MOTOR
LAMP P.C.B.
Q3 PHOTO SENSOR
DECK 2
SW30 EQ SWITCH
SW29 CASSETTE SWITCH
M5 REEL MOTOR
M6 ASSIST MOTOR

POINT TO POINT WIRING DIAGRAM

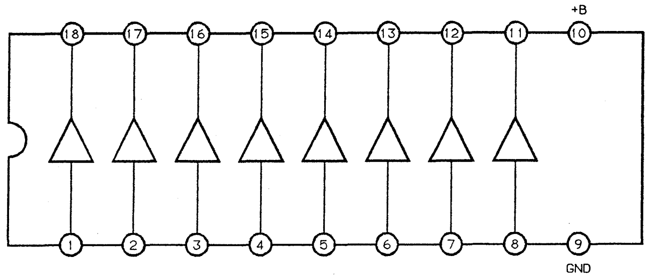

AC110/220V
50Hz
SW32
VOLTAGE SELECT
SWITCH
220V ⟷ 110V
SUB REMOCON P.C.B.
CN45
T1
POWER
TRANS
CONTROL P.C.B.
CN45
CN21
CN25
CN24
CN4
CN3
CN5
CN18
CN12
CN2
CN17
CN1
CN22
CN19
CN14
CN23
CN10
CN9
CN7
CN8
CN11
CN6
CN13
CN16
CN15
CN20
AUDIO P.C.B.
CN88
CN26
CN21
CN38
CN29
CN31
CN39
CN37
CN27
CN34
CN32
CN35
CN28
CN36
CN20
CN33
CN30
C1
HEADPHONE P.C.B.
SW31
POWER SWITCH
TIMER P.C.B.
FUNCTION SWITCH 2 P.C.B.
FUNCTION SWITCH 3 P.C.B.
FUNCTION SWITCH 1 P.C.B.
DIRECTION LED 2 P.C.B.
DIRECTION LED 1 P.C.B.
HD1
REC/PLAY/ERASE HEAD
HEAD 1 P.C.B.
SW21
DIRECTION
SWITCH
PHOTO P.C.B.
SW20 ASSIST SWITCH
(ASSIST P.C.B.)
CONNECTOR 1 P.C.B.
Q2
PHOTO
SENSOR
M
M1
MAIN MOTOR
M2
REEL MOTOR
FL DISPLAY P.C.B.
HEAD 2 P.C.B.
SW28
DIRECTION
SWITCH
SW27
ASSIST SWITCH
(ASSIST P.C.B.)
HD2
PLAY HEAD
M
M4
MAIN
MOTOR
CONNECTOR
2
P.C.B.
Q3
PHOTO
SENSOR
DECK 1
SW25
FWD
INTERLOCK
SWITCH
SW23
CrO₂
SWITCH
SW22
CASSETTE
SWITCH
S24
METAL
SWITCH
SW26
REV INTERLOCK
SWITCH
M3
ASSIST
MOTOR
LAMP P.C.B.
DECK 2
SW30
EQ
SWITCH
SW29
CASSETTE
SWITCH
M5
REEL MOTOR
M6
ASSIST MOTOR

SCHEMATIC DIAGRAM
(FL METER / REMOTE CONTROL SECTION)



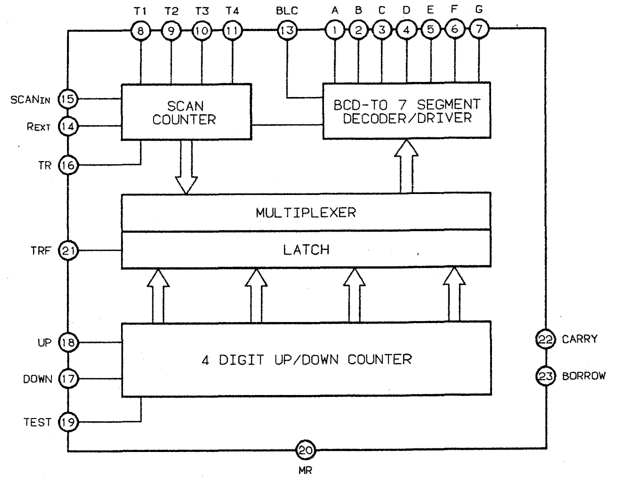
DIGITRON
CN99
DA72 DAN209S
NR75 RN1202
PR75 RN2203 IC74 LC4066B INTER FASE
IC74
NR75
PR75
C722 47/63
D720 GMA01
R702 100
R730 12K
R731 12K
R733 100K
R732 100K
R701 100
R703 100
R704 100
C702 68P
C703 68P
C701 470P
C721 0.01
IC71
IC71 TMP4270N REMOTE CONTROL MICRO COMPUTER
C704 0.01
C705 47/6.3
D701 DS442
R819 4.7K
R815 10K
R816 10K
R817 10K
RA81 10K×8
PR85
PR83
PR84
NR83
NR82
NR84
IC83
PR83~PR85 RN2203
NR82~NR84 RN1202
IC83 LB1290 BUFFER
IC82
IC81
NR81 RN1201 SENSOR AMPLIFIER
IC81 TC5054P COUNTER IC
C801 10/16
COUNTER RESET SW
SW1
PR80 RN2203 RESET CIRCUIT
PR80
D804 GMA01
C811 22/16
R805 68K
R806 68K
PR87
PR86
C805 3.3/25
R807 330K
R808 18K
C810 0.012
R804 51K
R818 51K
C804 4.7/25
R809 680
R810 4.7K
R814 12K
R811 5.6K
R812 5.6K
R813 10K
Q1
Q1 NJL5146EBA
Q802
NR81
C807 0.01
R820 22K
PR89
PR88
R803 22K
PR81
PR82
R802 22K
PR81, PR82, PR88, PR89 RN2202 BUFFER
Q802 2SC536 MUTING CIRCUIT
Q801 2SD734 POWER SUPPLY CIRCUIT
Q801
R801 1K
D803 GZA27Z
C812 0.01
C802 47/35
D801 DS442
D802 DS442
C803 22/35
C809 680P
C808 680P
C806 0.01
PR86, PR87 RN2203 IC82 MSL9359RS LEVEL METER CIRCUIT
TO AUDIO SECTION
X Y c b T a V U W
P O N S L Q M R
TO CONTROL SECTION
NR71
R711 47K
R712 15K
R705 1K
C709 4.7/25
Q701
Q702
C708 22/16
R706 22K
R707 1K
C707 4.7/50
R709 33K
R708 470K
C706 0.01
D702 GMA01
D703 GMA01
D707 GZA2.7Y
R715 15K
R716 100K
C710 47/6.3
R717 15K
DA71 DAN209S
R710 100K
C716 47/6.3
R718 22K
R719 22K
R720 33K
C712 22/16
C711 22/16
R721 33K
IC72
IC73
IC72 TC4011BP
IC73 TC4069BP
NR71 RN1202
Q701, Q702 2SC536
REMOTE CONTROL CIRCUIT
R714 5.6K
D706 GMA01
R724 8.2K 1/4W
R723 10K
C714 10/16
C713 0.01
R725 100K
C715 47/6.3
C717 22/10 (NP)
R713 330
R722 22K
D705 GMA01
D708 GMA01
D709 GMA01
D710 GMA01
D712 GMA01
A E B D C F
J I H K G

BUFFER IC LB1290



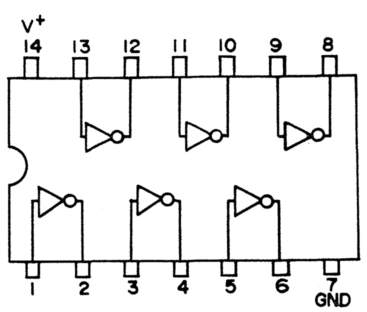
+B
18 17 16 15 14 13 12 11 10
1 2 3 4 5 6 7 8 9
GND

COUNTER IC TC5054P



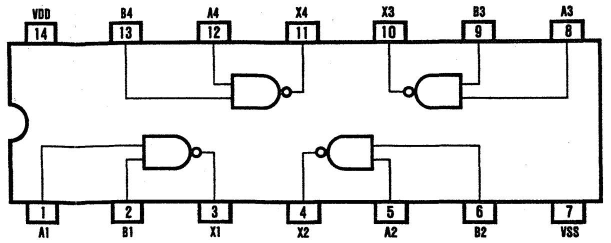
T1 T2 T3 T4 BLC A B C D E F G
8 9 10 11 13 1 2 3 4 5 6 7
SCANIN 15
REXT 14
TR 16
TRF 21
UP 18
DOWN 17
TEST 19
SCAN COUNTER
BCD-TO 7 SEGMENT DECODER/DRIVER
MULTIPLEXER
LATCH
4 DIGIT UP/DOWN COUNTER
22 CARRY
23 BORROW
20 MR

HEX INVERTER IC TC4069UBP



V+
14 13 12 11 10 9 8
1 2 3 4 5 6 7
GND

NAND GATE IC TC4011BP



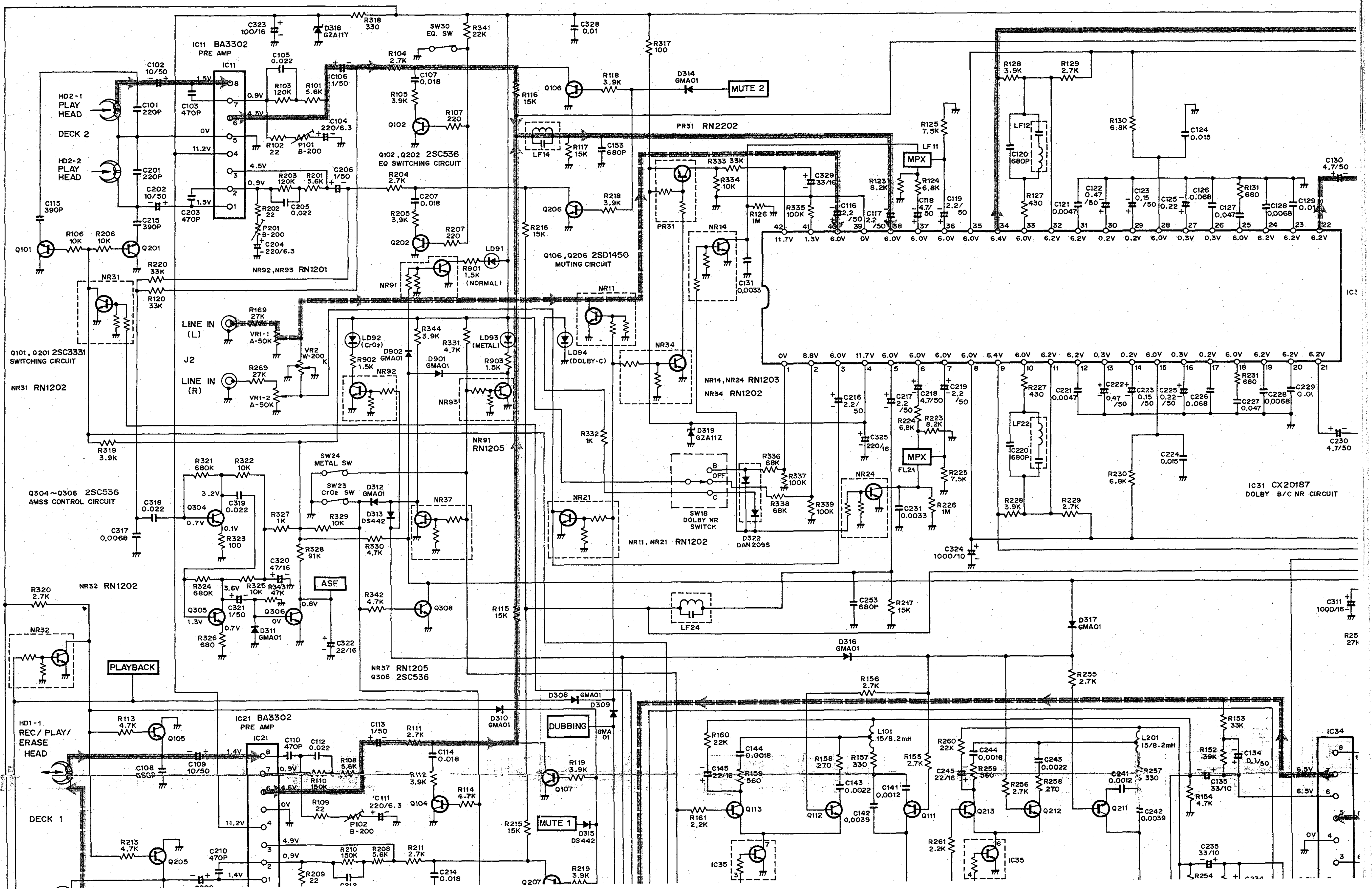
VDD B4 A4 X4 X3 B3 A3
14 13 12 11 10 9 8
1 2 3 4 5 6 7
A1 B1 X1 X2 A2 B2 VSS

NOTES:

1. All resistors values are indicated in "ohm" (K=10^3, M=10^6).
2. All capacitors values are indicated in "μF" (P=10^{-12}).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10 % with respect to chassis ground
   c. No signals at input terminals
   d. AC input at 220 volts 50 Hz
4. This is a basic schematic diagram.

Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

SCHEMATIC DIAGRAM (Audio Section)


HD2-1 PLAY HEAD
DECK 2
HD2-2 PLAY HEAD
IC11 BA3302 PRE AMP
IC11
Q102,Q202 2SC536 EQ SWITCHING CIRCUIT
SW30 EQ. SW
MUTE 2
PR31 RN2202
Q106,Q206 2SD1450 MUTING CIRCUIT
NR92,NR93 RN1201
LINE IN (L)
LINE IN (R)
J2
VR1-1 A-50K
VR1-2 A-50K
VR2 W-200 K
LD91
R901 1.5K (NORMAL)
LD92 (CrO2)
LD93 (METAL)
LD94 (DOLBY-C)
Q101,Q201 2SC3331 SWITCHING CIRCUIT
NR31 RN1202
Q304~Q306 2SC536 AMSS CONTROL CIRCUIT
SW24 METAL SW
SW23 CrO2 SW
ASF
NR91 RN1205
NR37 RN1205
Q308 2SC536
NR11, NR21 RN1202
NR14,NR24 RN1203
NR34 RN1202
SW18 DOLBY NR SWITCH
B OFF C
D322 DAN209S
D319 GZA11Z
MPX
LF11
LF12
LF14
LF21
LF22
LF24
IC31 CX20187 DOLBY B/C NR CIRCUIT
IC3
NR32 RN1202
PLAYBACK
HD1-1 REC/PLAY/ERASE HEAD
DECK 1
IC21 BA3302 PRE AMP
IC21
DUBBING
MUTE 1
D308 GMA01
D309
D310 GMA01
D315 DS442
D316 GMA01
D317 GMA01
L101 15/8.2mH
L201 15/8.2mH
IC35
IC34
Q101
Q201
Q102
Q202
Q104
Q105
Q106
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Q205
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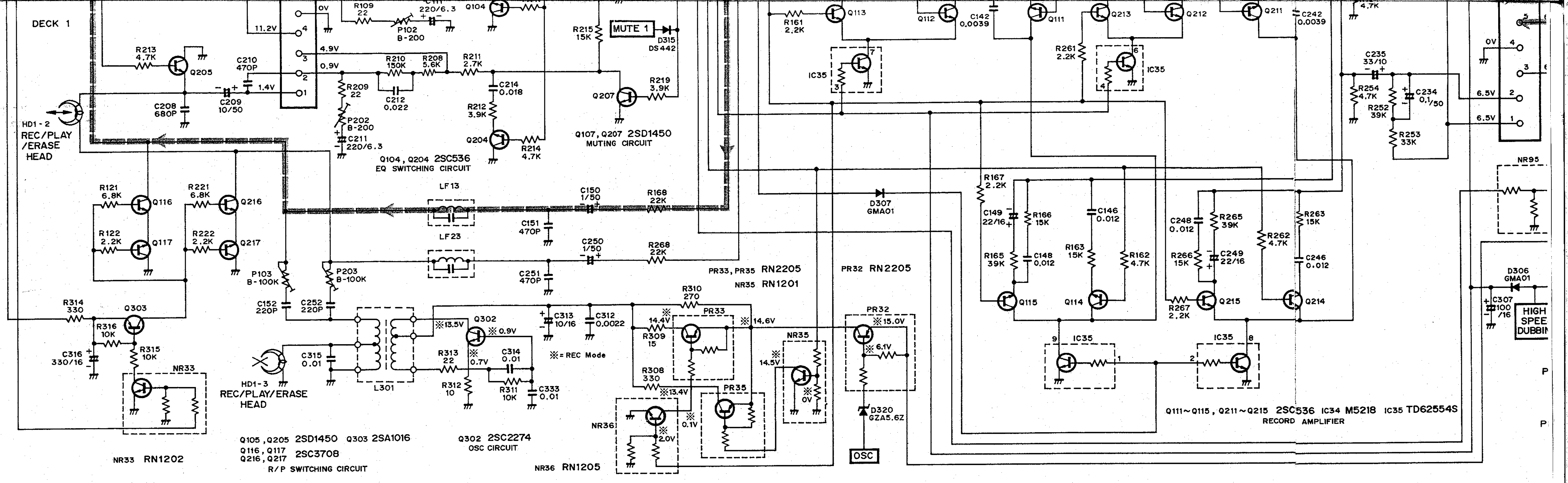
Q207
Q211
Q212
Q213
Q304
Q305
Q306
Q308


DECK 1
HD1-2 REC/PLAY /ERASE HEAD
HD1-3 REC/PLAY/ERASE HEAD
MUTE 1
Q104, Q204 2SC536 EQ SWITCHING CIRCUIT
Q107, Q207 2SD1450 MUTING CIRCUIT
Q105, Q205 2SD1450 Q303 2SA1016
Q116, Q117 Q216, Q217 2SC3708
R/P SWITCHING CIRCUIT
Q302 2SC2274 OSC CIRCUIT
※= REC Mode
NR33 RN1202
NR36 RN1205
PR33, PR35 RN2205
NR35 RN1201
PR32 RN2205
OSC
HIGH SPEE DUBBIN
Q111~Q115, Q211~Q215 2SC536 IC34 M5218 IC35 TD62554S
RECORD AMPLIFIER

━━━━━━▶ Signal flow of **PLAY**

╍╍╍╍╍╍▶ Signal flow of **RECORD**

No.	Name	Position	No.	Name	Position
SW1	Counter Reset Switch (Deck 1)	OFF	SW17	Direction Mode Switch	ONE-CYCLE
SW2	Space Pause Switch (Deck 1)	OFF	SW18	Dolby NR Switch	OFF
SW3	REC Pause Switch (Deck 1)	OFF	SW19	Timer Standby Switch	OFF
SW4	F.F Switch (Deck 1)	OFF	SW20	Assist Switch (Deck 1)	STOP
SW5	Stop Switch (Deck 1)	OFF	SW21	Direction Switch (Deck 1)	FWD
SW6	FWD Play Switch (Deck 1)	OFF	SW22	Cassette Switch (Deck 1)	OFF
SW7	REV Play Switch (Deck 1)	OFF	SW23	CrO2 Switch (Deck 1)	OFF
SW8	REC Switch (Deck 1)	OFF	SW24	Metal Switch (Deck 1)	OFF
SW9	REW Switch (Deck 1)	OFF	SW25	FWD Interlock Switch (Deck 1)	OFF
SW10	High Speed Dubbing Switch	OFF	SW26	REV Interlock Switch (Deck 1)	OFF
SW11	Normal Speed Dubbing Switch	OFF	SW27	Assist Switch (Deck 2)	STOP
SW12	F.F Switch (Deck 2)	OFF	SW28	Direction Switch (Deck 2)	FWD
SW13	Stop Switch (Deck 2)	OFF	SW29	Cassette Switch (Deck 2)	OFF
SW14	FWD Play Switch (Deck 2)	OFF	SW30	EQ. Switch (Deck 2)	OFF
SW15	REV Play Switch (Deck 2)	OFF	SW31	Power Switch	OFF
SW16	REW Switch (Deck 2)	OFF	SW32	Voltage Select Switch	220V

NOTES:

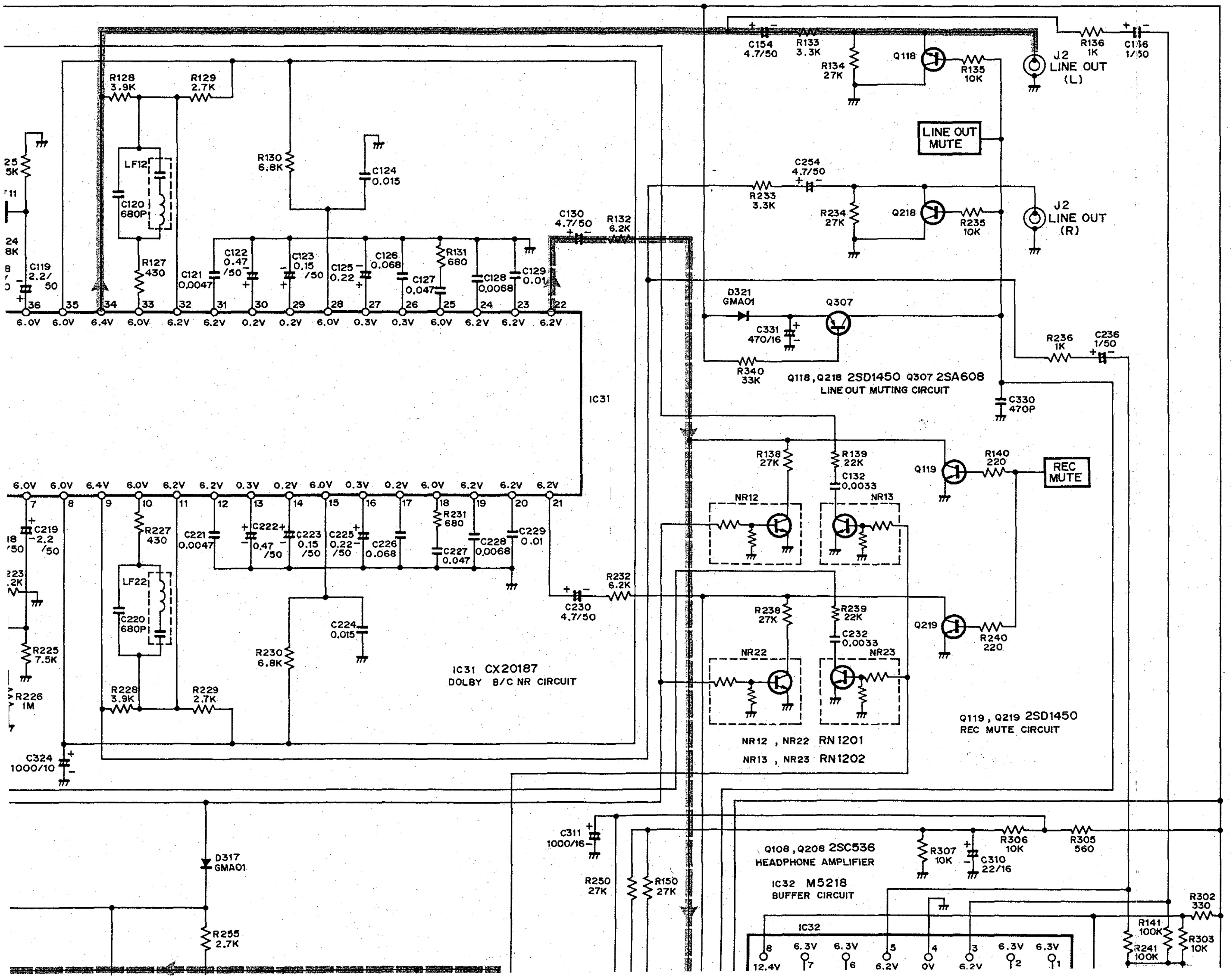
1. All resistors values are indicated in "ohm" ($K=10^3$, $M=10^6$).
2. All capacitors values are indicated in "μF" ($P=10^{-12}$).
3. All voltages indicated on the schematics are measured under the following conditions.
   - a. Use a V.T.V.M.
   - b. All voltages ±10% with respect to chassis ground
   - c. No signals at input terminals
   - d. AC input at 220 volts 50 Hz
4. This is a basic schematic diagram.

Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

1

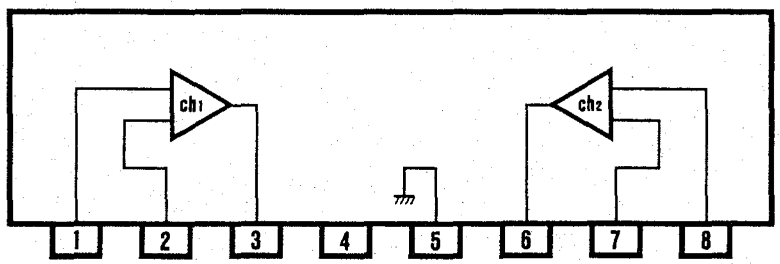
Fisher 3482

M (Audio Section)



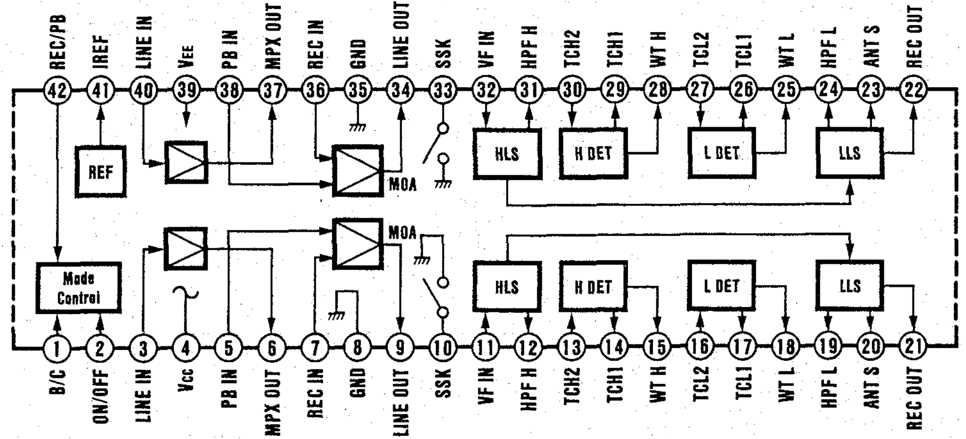
R128 3.9K
R129 2.7K
R130 6.8K
C124 0.015
LF12
C120 680P
R127 430
C121 0.0047
C122 0.47/50
C123 0.15/50
C125 0.22
C126 0.068
C127 0.047
R131 680
C128 0.0068
C129 0.01
C119 2.2/50
C130 4.7/50
R132 6.2K
6.0V 6.0V 6.4V 6.0V 6.2V 6.2V 0.2V 0.2V 6.0V 0.3V 0.3V 6.0V 6.2V 6.2V 6.2V
IC31
C154 4.7/50
R133 3.3K
R134 27K
Q118
R135 10K
J2 LINE OUT (L)
R136 1K
C136 1/50
LINE OUT MUTE
C254 4.7/50
R233 3.3K
R234 27K
Q218
R235 10K
J2 LINE OUT (R)
D321 GMA01
Q307
C331 470/16
R340 33K
Q118, Q218 2SD1450 Q307 2SA608
LINE OUT MUTING CIRCUIT
R236 1K
C236 1/50
C330 470P
R138 27K
R139 22K
C132 0.0033
NR12
NR13
Q119
R140 220
REC MUTE
C219 2.2/50
R227 430
C221 0.0047
C222 0.47/50
C223 0.15/50
C225 0.22/50
C226 0.068
R231 680
C227 0.047
C228 0.0068
C229 0.01
LF22
C220 680P
R225 7.5K
R226 1M
R228 3.9K
R229 2.7K
R230 6.8K
C224 0.015
C230 4.7/50
R232 6.2K
IC31 CX20187
DOLBY B/C NR CIRCUIT
R238 27K
R239 22K
C232 0.0033
NR22
NR23
Q219
R240 220
NR12, NR22 RN1201
NR13, NR23 RN1202
Q119, Q219 2SD1450
REC MUTE CIRCUIT
C324 1000/10
D317 GMA01
R255 2.7K
C311 1000/16
R250 27K
R150 27K
Q108, Q208 2SC536
HEADPHONE AMPLIFIER
IC32 M5218
BUFFER CIRCUIT
R307 10K
C310 22/16
R306 10K
R305 560
R302 330
R141 100K
R241 100K
R303 10K
IC32
12.4V 6.3V 6.3V 6.2V 0V 6.2V 6.3V 6.3V

PRE-AMP IC BA 3302

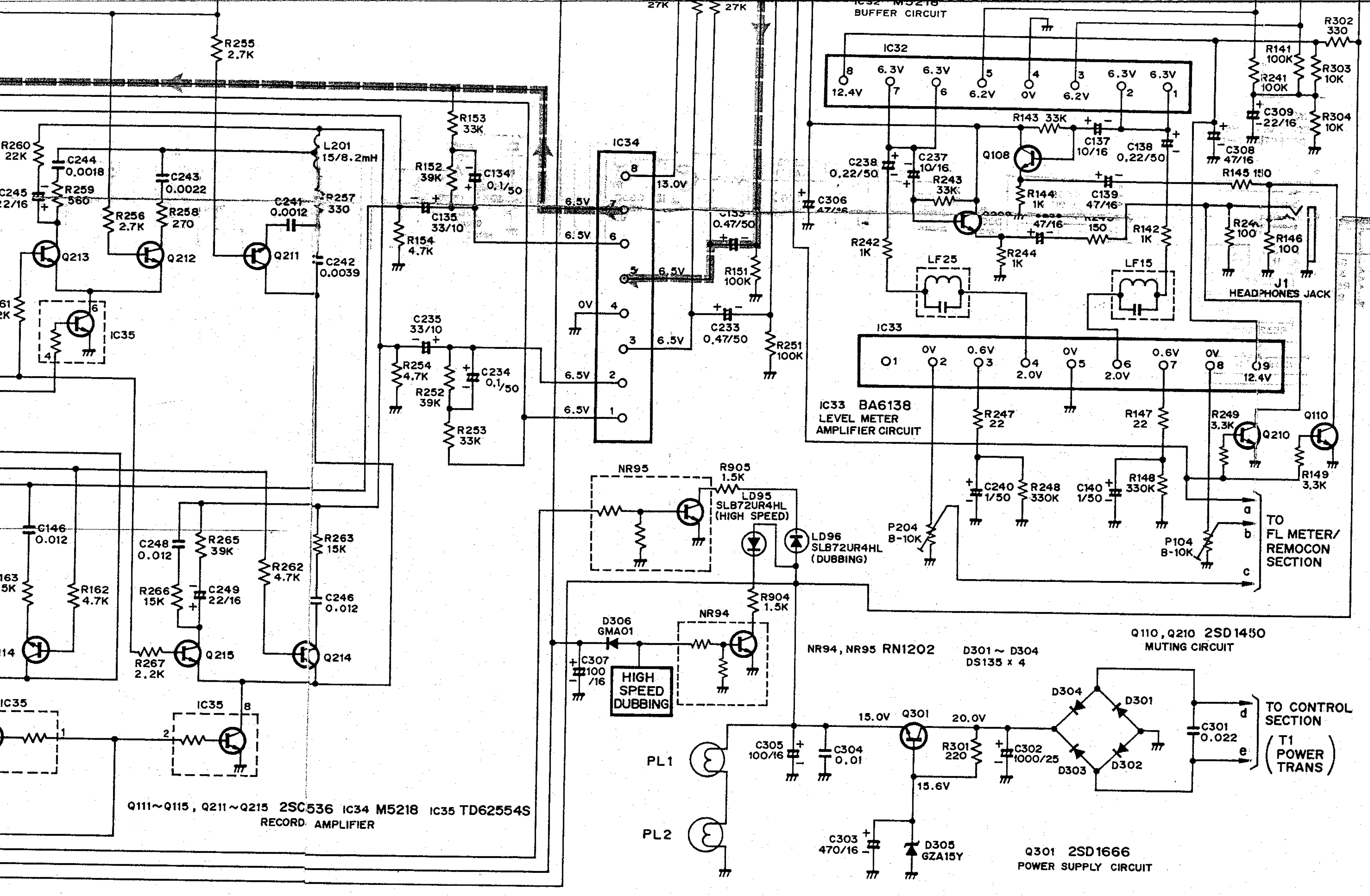


ch1
ch2
1
2
3
4
5
6
7
8

DOLBY IC CX 20187



REC/PB
IREF
LINE IN
VEE
PB IN
MPX OUT
REC IN
GND
LINE OUT
SSK
VF IN
HPF H
TCH2
TCH1
WT H
TCL2
TCL1
WT L
HPF L
ANT S
REC OUT
REF
MOA
HLS
H DET
L DET
LLS
Mode Control
B/C
ON/OFF
LINE IN
Vcc
PB IN
MPX OUT
REC IN
GND
LINE OUT
SSK
VF IN
HPF H
TCH2
TCH1
WT H
TCL2
TCL1
WT L
HPF L
ANT S
REC OUT

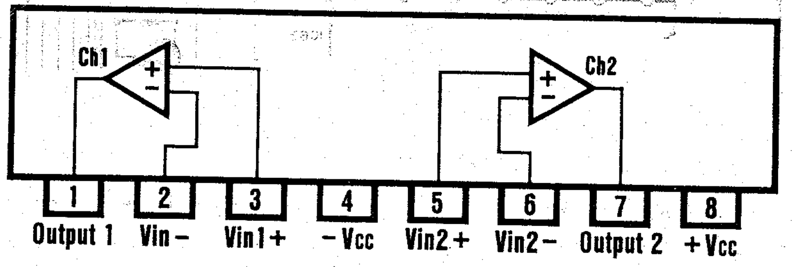


IC32 M5218 BUFFER CIRCUIT
IC32
8 12.4V
6.3V 7
6.3V 6
5 6.2V
4 0V
3 6.2V
6.3V 2
6.3V 1
R302 330
R141 100K
R241 100K
R303 10K
C309 22/16
R304 10K
R143 33K
C137 10/16
C138 0.22/50
C308 47/16
C238 0.22/50
C237 10/16
R243 33K
Q108
R144 1K
C139 47/16
R145 150
C306 47/16
R242 1K
R244 1K
47/16
150
R142 1K
R246 100
R146 100
J1 HEADPHONES JACK
LF25
LF15
IC33
O1
0V 2
0.6V 3
4 2.0V
0V 5
6 2.0V
0.6V 7
0V 8
9 12.4V
IC33 BA6138 LEVEL METER AMPLIFIER CIRCUIT
R247 22
R147 22
R249 3.3K
Q210
Q110
R149 3.3K
C240 1/50
R248 330K
C140 1/50
R148 330K
P204 B-10K
P104 B-10K
a
b
c
TO FL METER/ REMOCON SECTION
Q110, Q210 2SD1450 MUTING CIRCUIT
IC34
8 13.0V
6.5V 7
6.5V 6
5 6.5V
0V 4
3 6.5V
6.5V 2
6.5V 1
C133 0.47/50
R151 100K
C233 0.47/50
R251 100K
27K
27K
R255 2.7K
R153 33K
R152 39K
C134 0.1/50
C135 33/10
R154 4.7K
C235 33/10
R254 4.7K
R252 39K
C234 0.1/50
R253 33K
R260 22K
C244 0.0018
C243 0.0022
L201 15/8.2mH
C245 22/16
R259 560
R256 2.7K
R258 270
C241 0.0012
R257 330
C242 0.0039
Q213
Q212
Q211
IC35
C146 0.012
C248 0.012
R265 39K
R262 4.7K
R263 15K
R163 5K
R162 4.7K
R266 15K
C249 22/16
C246 0.012
R267 2.2K
Q215
Q214
IC35
Q111~Q115, Q211~Q215 2SC536 IC34 M5218 IC35 TD62554S RECORD AMPLIFIER
NR95
R905 1.5K
LD95 SLB72UR4HL (HIGH SPEED)
LD96 SLB72UR4HL (DUBBING)
NR94
R904 1.5K
D306 GMA01
C307 100/16
HIGH SPEED DUBBING
NR94, NR95 RN1202
D301 ~ D304 DS135 x 4
15.0V
Q301
20.0V
R301 220
C302 1000/25
D304
D301
D303
D302
C301 0.022
d
e
TO CONTROL SECTION
(T1 POWER TRANS)
C305 100/16
C304 0.01
15.6V
PL1
PL2
C303 470/16
D305 GZA15Y
Q301 2SD1666 POWER SUPPLY CIRCUIT

l voltages ±10 % with respect to chassis ground
o signals at input terminals
C input at 220 volts 50 Hz
is a basic schematic diagram.

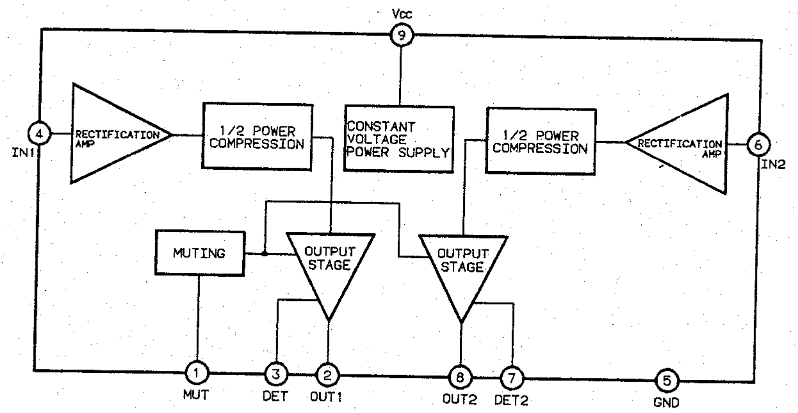
ation reserves the right to make any changes or

REC AMP / BUFFER IC M5218L



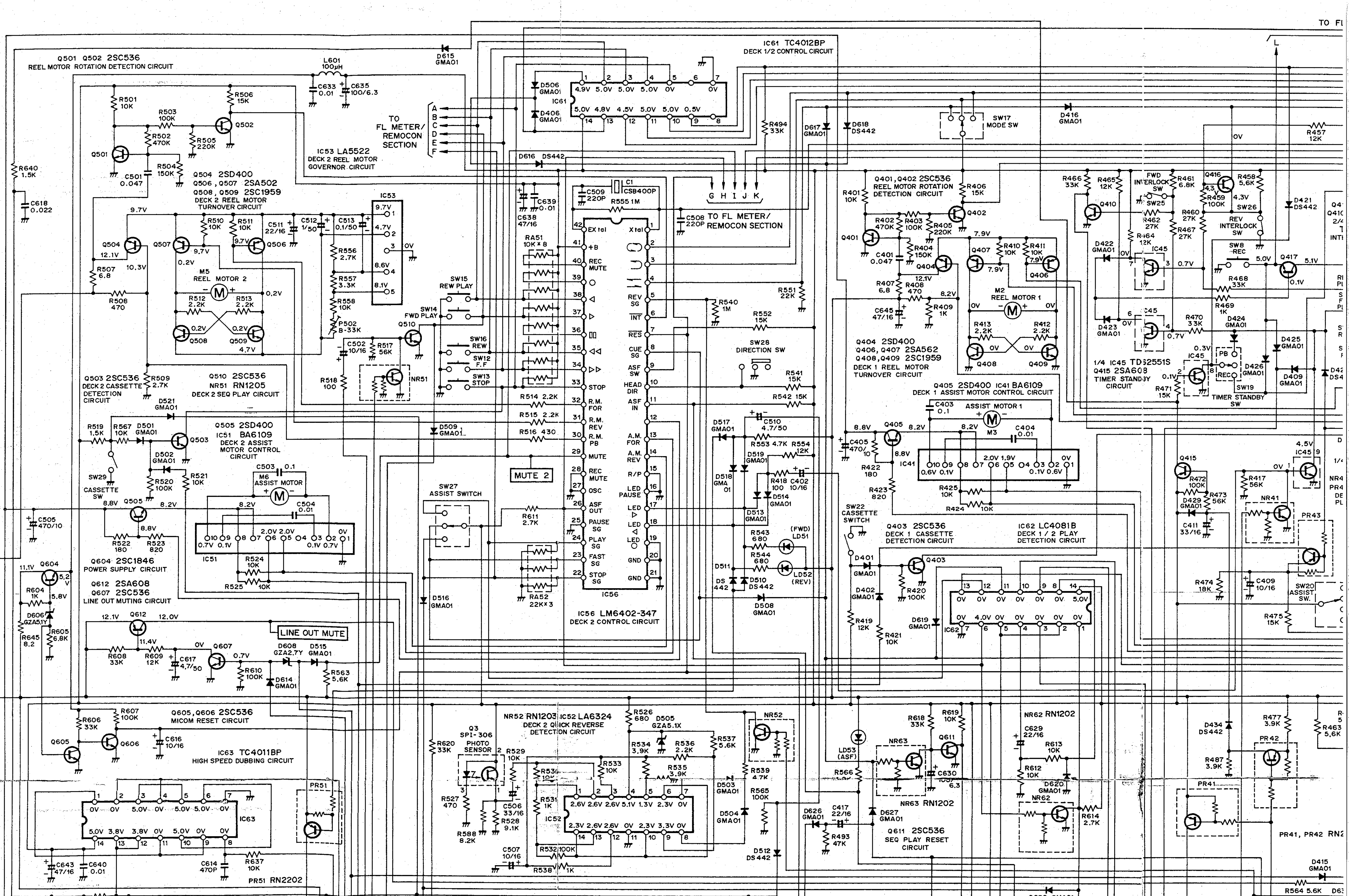
Ch1
Ch2
1 Output 1
2 Vin−
3 Vin1+
4 −Vcc
5 Vin2+
6 Vin2−
7 Output 2
8 +Vcc

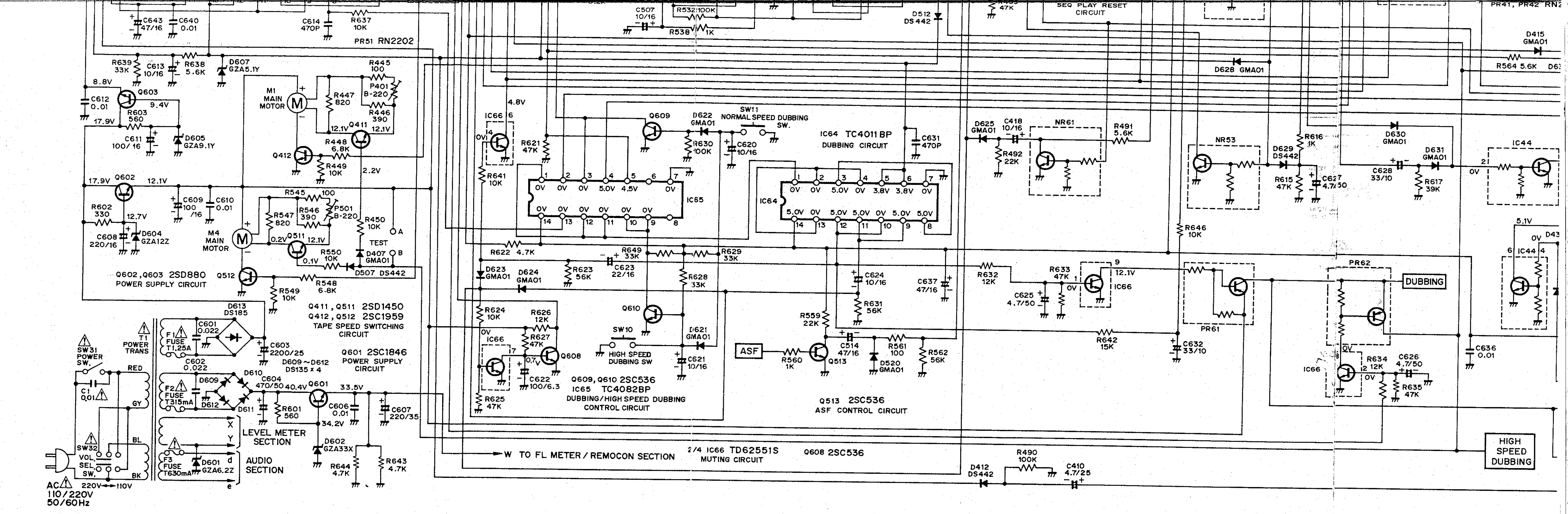
LEVEL METER IC BA6138



Vcc 9
4 IN1
RECTIFICATION AMP
1/2 POWER COMPRESSION
CONSTANT VOLTAGE POWER SUPPLY
1/2 POWER COMPRESSION
RECTIFICATION AMP
6 IN2
MUTING
OUTPUT STAGE
OUTPUT STAGE
1 MUT
3 DET
2 OUT1
8 OUT2
7 DET2
5 GND

SCHEMATIC DIAGRAM (Control Section)


TO FL
Q501 Q502 2SC536
REEL MOTOR ROTATION DETECTION CIRCUIT
D615 GMA01
L601 100μH
C633 0.01
C635 100/6.3
IC61 TC4012BP
DECK 1/2 CONTROL CIRCUIT
D506 GMA01
D406 GMA01
R501 10K
R503 100K
R506 15K
Q502
R502 470K
R505 220K
Q501
C501 0.047
R504 150K
R640 1.5K
C618 0.022
TO FL METER/ REMOCON SECTION
A B C D E F
IC53 LA5522
DECK 2 REEL MOTOR GOVERNOR CIRCUIT
D616 DS442
R494 33K
D617 GMA01
D618 DS442
SW17 MODE SW
D416 GMA01
R457 12K
Q504 2SD400
Q506, Q507 2SA502
Q508, Q509 2SC1959
DECK 2 REEL MOTOR TURNOVER CIRCUIT
IC53
C509 220P
C1 CSB400P
R555 1M
G H I J K
C508 220P
TO FL METER/ REMOCON SECTION
C639 0.01
C638 47/16
RA51 10K×8
R510 10K
R511 10K
C511 22/16
C512 1/50
C513 0.1/50
Q504
Q507
Q506
R556 2.7K
R557 3.3K
R558 10K
P502 B-33K
R507 6.8
M5 REEL MOTOR 2
R512 2.2K
R513 2.2K
R508 470
Q508
Q509
Q401, Q402 2SC536
REEL MOTOR ROTATION DETECTION CIRCUIT
R401 10K
R406 15K
Q402
R402 470K
R403 100K
R405 220K
Q401
C401 0.047
R404 150K
Q404
Q407
R410 10K
R411 10K
Q406
R407 6.8
R408 470
R409 1K
C645 47/16
M2 REEL MOTOR 1
R413 2.2K
R412 2.2K
Q408
Q409
Q404 2SD400
Q406, Q407 2SA562
Q408, Q409 2SC1959
DECK 1 REEL MOTOR TURNOVER CIRCUIT
R466 33K
R465 12K
FWD INTERLOCK SW
R461 6.8K
Q416
R458 5.6K
R459 100K
SW25
R462 27K
R460 27K
R467 27K
SW26
REV INTERLOCK SW
Q410
R464 12K
IC45
D422 GMA01
SW8 REC
Q417
R468 33K
R469 1K
D423 GMA01
R470 33K
D424 GMA01
D425 GMA01
1/4 IC45 TD62551S
Q415 2SA608
TIMER STANDBY CIRCUIT
R471 15K
PB
REC
D426 GMA01
SW19
TIMER STANDBY SW
D409 GMA01
D421 DS442
SW15 REW PLAY
SW14 FWD PLAY
SW16 REW
SW12 F.F
SW13 STOP
Q510
C502 10/16
R517 56K
R518 100
NR51
Q510 2SC536
NR51 RN1205
DECK 2 SEQ PLAY CIRCUIT
Q503 2SC536
DECK 2 CASSETTE DETECTION CIRCUIT
R509 2.7K
D521 GMA01
R519 1.5K
R567 10K
D501 GMA01
Q503
D502 GMA01
R520 100K
R521 10K
SW29 CASSETTE SW
D509 GMA01
R514 2.2K
R515 2.2K
R516 430
MUTE 2
Q505 2SD400
IC51 BA6109
DECK 2 ASSIST MOTOR CONTROL CIRCUIT
C503 0.1
M6 ASSIST MOTOR
C604 0.01
Q505
R522 180
R523 820
IC51
R524 10K
R525 10K
C505 470/10
SW27 ASSIST SWITCH
R611 2.7K
IC56
42 EX tal
41 +B
40 REC MUTE
39
38
37
36
35
34
33 STOP
32 R.M. FOR
31 R.M. REV
30 R.M. PB
29 MUTE
28 REC MUTE
27 OSC
26 ASF OUT
25 PAUSE SG
24 PLAY SG
23 FAST SG
22 STOP SG
X tal 1
2
3
4
REV SG 5
INT 6
RES 7
CUE SG 8
ASF SW 9
HEAD DIR 10
ASF IN 11
12
A.M. FOR 13
A.M. REV 14
R/P 15
LED PAUSE 16
LED 17
LED 18
LED 19
GND 20
GND 21
RA52 22K×3
IC56 LM6402-347
DECK 2 CONTROL CIRCUIT
R540 1M
R552 15K
R551 22K
SW28 DIRECTION SW
R541 15K
R542 15K
D517 GMA01
C510 4.7/50
R553 4.7K
R554 12K
D519 GMA01
D518 GMA 01
R418 100
C402 10/16
D514 GMA01
D513 GMA01
R543 680
(FWD) LD51
R544 680
LD52 (REV)
D511
DS 442
D510 DS442
D508 GMA01
D516 GMA01
Q405 2SD400 IC41 BA6109
DECK 1 ASSIST MOTOR CONTROL CIRCUIT
C403 0.1
ASSIST MOTOR 1
M3
C404 0.01
Q405
C405 470/10
R422 180
IC41
R423 820
R425 10K
R424 10K
SW22 CASSETTE SWITCH
Q403 2SC536
DECK 1 CASSETTE DETECTION CIRCUIT
IC62 LC4081B
DECK 1 / 2 PLAY DETECTION CIRCUIT
D401 GMA01
Q403
R420 100K
D402 GMA01
R419 12K
R421 10K
D619 GMA01
IC62
Q415
R472 100K
R473 56K
D429 GMA01
C411 33/16
R417 56K
IC45
NR41
PR43
R474 18K
C409 10/16
SW20 ASSIST SW.
R475 15K
Q604 2SC1846
POWER SUPPLY CIRCUIT
Q604
R604 1K
D606 GZA5.1Y
R645 8.2
R605 6.8K
Q612 2SA608
Q607 2SC536
LINE OUT MUTING CIRCUIT
Q612
LINE OUT MUTE
R608 33K
R609 12K
C617 4.7/50
Q607
R610 100K
D608 GZA2.7Y
D515 GMA01
D614 GMA01
R563 5.6K
Q605, Q606 2SC536
MICOM RESET CIRCUIT
R606 33K
R607 100K
Q605
Q606
C616 10/16
IC63 TC4011BP
HIGH SPEED DUBBING CIRCUIT
IC63
C643 47/16
C640 0.01
C614 470P
R637 10K
PR51 RN2202
PR51
R620 33K
Q3 SPI-306 PHOTO SENSOR
R529 10K
R527 470
C506 33/16
R588 8.2K
R528 9.1K
NR52 RN1203
IC52 LA6324
DECK 2 QUICK REVERSE DETECTION CIRCUIT
R526 680
D505 GZA5.1X
R534 3.9K
R536 2.2K
R537 5.6K
R533 10K
R530 10K
R535 3.9K
R531 1K
IC52
R532 100K
C507 10/16
R538 1K
D503 GMA01
D504 GMA01
NR52
R539 4.7K
R565 100K
D512 DS442
LD53 (ASF)
R566
D626 GMA01
C417 22/16
R493 47K
D627 GMA01
NR63
R618 33K
R619 10K
Q611
C630 6.3
NR63 RN1202
Q611 2SC536
SEQ PLAY RESET CIRCUIT
NR62 RN1202
C629 22/16
R613 10K
R612 10K
D620 GMA01
NR62
R614 2.7K
D434 DS442
R477 3.9K
R463 5.6K
PR42
R487 3.9K
PR41
PR41, PR42 RN2
D415 GMA01
R564 5.6K


PR51 RN2202
SEQ PLAY RESET CIRCUIT
PR41, PR42 RN2
M1 MAIN MOTOR
M4 MAIN MOTOR
Q602, Q603 2SD880
POWER SUPPLY CIRCUIT
Q411, Q511 2SD1450
Q412, Q512 2SC1959
TAPE SPEED SWITCHING CIRCUIT
Q601 2SC1846
POWER SUPPLY CIRCUIT
D609~D612 DS135 x 4
SW11 NORMAL SPEED DUBBING SW.
IC64 TC4011BP
DUBBING CIRCUIT
IC65
SW10 HIGH SPEED DUBBING SW
Q609, Q610 2SC536
IC65 TC4082BP
DUBBING/HIGH SPEED DUBBING CONTROL CIRCUIT
ASF
Q513 2SC536
ASF CONTROL CIRCUIT
NR61
NR53
IC44
PR62
PR61
DUBBING
HIGH SPEED DUBBING
SW31 POWER SW.
T1 POWER TRANS
F1 FUSE T1.25A
F2 FUSE T315mA
F3 FUSE T630mA
SW32 VOL. SEL. SW.
AC 110/220V 50/60Hz
220V ←→ 110V
RED
GY
BL
BK
LEVEL METER SECTION
AUDIO SECTION
W TO FL METER / REMOCON SECTION
2/4 IC66 TD62551S
MUTING CIRCUIT
Q608 2SC536
TEST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.

Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

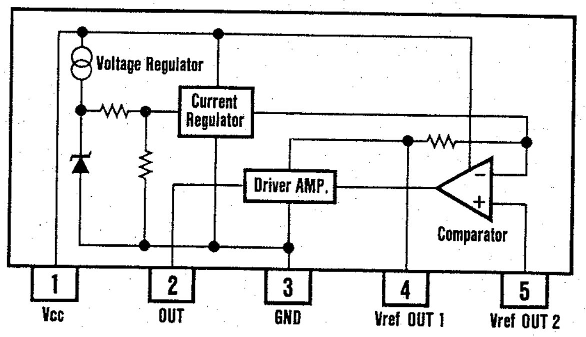
NOTES:

1. All resistors values are indicated in "ohm" (K=10^3, M=10^6).
2. All capacitors values are indicated in "μF" (P=10^{-12}).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10 % with respect to chassis ground
   c. No signals at input terminals
   d. AC input at 220 volts 50 Hz
4. This is a basic schematic diagram.

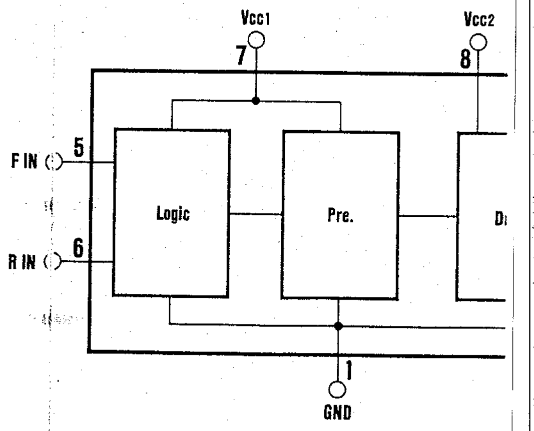
Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

3

MOTOR GOVERNOR IC LA 5522

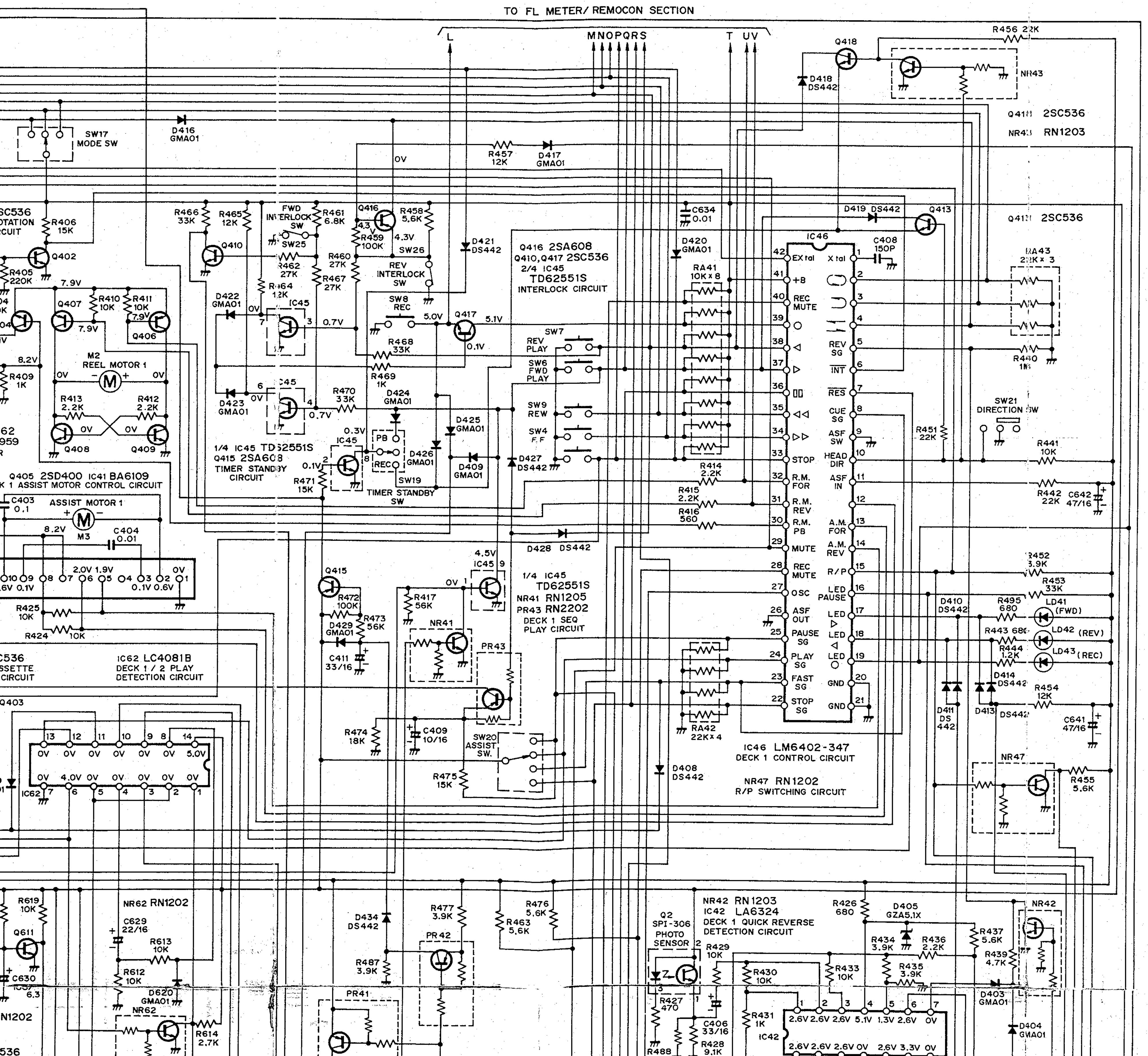

Voltage Regulator
Current Regulator
Driver AMP.
Comparator
1
Vcc
2
OUT
3
GND
4
Vref OUT 1
5
Vref OUT 2

MOTOR CONTROL IC BA 6109


Vcc1
7
Vcc2
8
F IN
5
R IN
6
Logic
Pre.
1
GND

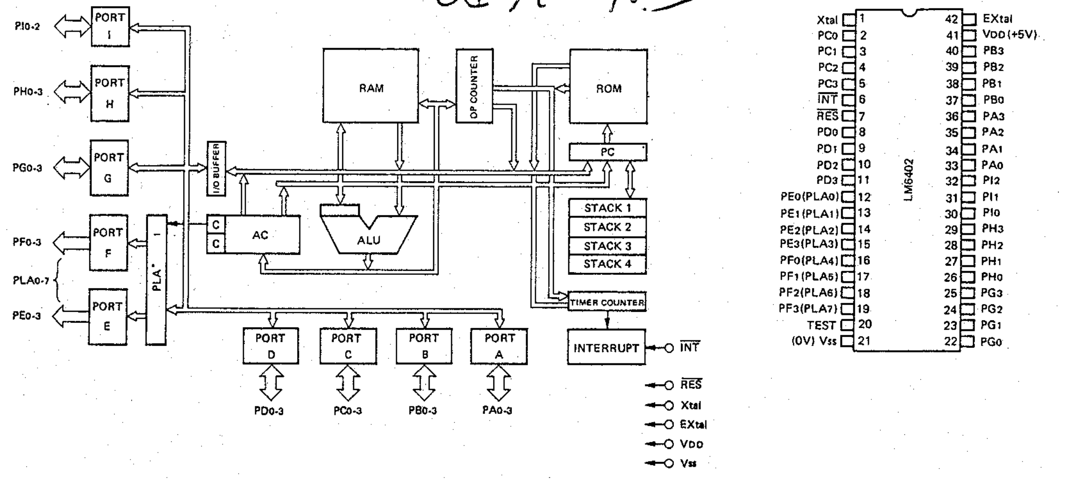
3482

(Control Section)

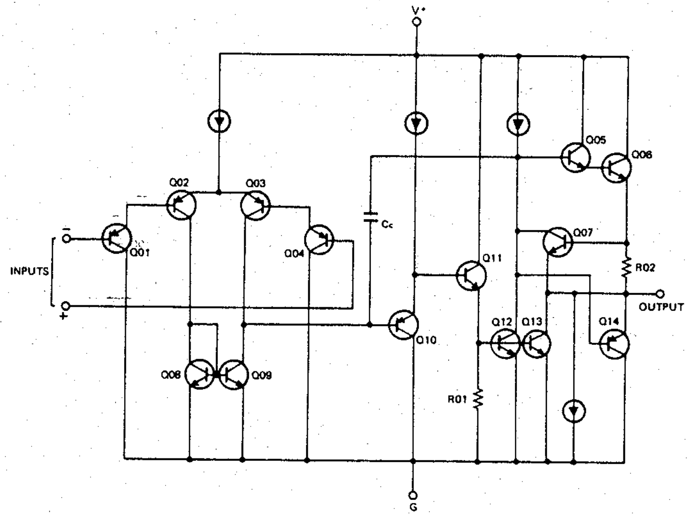

TO FL METER/ REMOCON SECTION
L
M N O P Q R S
T U V
SW17 MODE SW
D416 GMA01
Q418
D418 DS442
R456 22K
NR43
Q418 2SC536
NR43 RN1203
R457 12K
D417 GMA01
Q402
R406 15K
R405 220K
Q407
R410 10K
R411 10K
Q406
M2 REEL MOTOR 1
R409 1K
R413 2.2K
R412 2.2K
Q408
Q409
Q405 2SD400 IC41 BA6109
ASSIST MOTOR CONTROL CIRCUIT
C403 0.1
ASSIST MOTOR 1
M3
C404 0.01
R425 10K
R424 10K
IC62 LC4081B
DECK 1 / 2 PLAY DETECTION CIRCUIT
Q403
IC62
R466 33K
R465 12K
Q410
FWD INTERLOCK SW
R461 6.8K
Q416
R458 5.6K
R459 100K
SW25
SW26
R462 27K
R464 1.2K
R460 27K
R467 27K
REV INTERLOCK SW
D421 DS442
Q416 2SA608
Q410,Q417 2SC536
2/4 IC45
TD62551S
INTERLOCK CIRCUIT
D422 GMA01
IC45
SW8 REC
Q417
R468 33K
R469 1K
D423 GMA01
R470 33K
D424 GMA01
D425 GMA01
PB
REC
D426 GMA01
SW19
D409 GMA01
D427 DS442
1/4 IC45 TD62551S
Q415 2SA608
TIMER STANDBY CIRCUIT
R471 15K
TIMER STANDBY SW
SW7 REV PLAY
SW6 FWD PLAY
SW9 REW
SW4 F.F
D428 DS442
Q415
R472 100K
R473 56K
D429 GMA01
C411 33/16
R417 56K
NR41
1/4 IC45
TD62551S
NR41 RN1205
PR43 RN2202
DECK 1 SEQ PLAY CIRCUIT
PR43
R474 18K
C409 10/16
SW20 ASSIST SW.
R475 15K
C634 0.01
D420 GMA01
RA41 10K×8
IC46
C408 150P
D419 DS442
Q413
Q413 2SC536
EX tal
+B
REC MUTE
REV SG
INT
RES
CUE SG
ASF SW
STOP
HEAD DIR
R.M. FOR
ASF IN
R.M. REV
R.M. PB
A.M. FOR
MUTE
A.M. REV
REC MUTE
R/P
OSC
LED PAUSE
ASF OUT
LED
PAUSE SG
PLAY SG
FAST SG
GND
STOP SG
R414 2.2K
R415 2.2K
R416 560
RA42 22K×4
D408 DS442
IC46 LM6402-347
DECK 1 CONTROL CIRCUIT
NR47 RN1202
R/P SWITCHING CIRCUIT
RA43 22K×3
R440 1M
SW21 DIRECTION SW
R451 22K
R441 10K
R442 22K
C642 47/16
R452 3.9K
R453 33K
D410 DS442
R495 680
LD41 (FWD)
R443 680
LD42 (REV)
R444 1.2K
LD43 (REC)
D414 DS442
D411 DS442
D413
R454 12K
C641 47/16
NR47
R455 5.6K
R619 10K
Q611
C630
NR62 RN1202
C629 22/16
R613 10K
R612 10K
D620 GMA01
NR62
R614 2.7K
D434 DS442
R477 3.9K
R476 5.6K
R463 5.6K
PR42
R487 3.9K
PR41
Q2 SPI-306 PHOTO SENSOR
NR42 RN1203
IC42 LA6324
DECK 1 QUICK REVERSE DETECTION CIRCUIT
R429 10K
R427 470
R430 10K
C406 33/16
R428 9.1K
R431 1K
R488
IC42
R426 680
D405 GZA5.1X
R433 10K
R434 3.9K
R436 2.2K
R435 3.9K
R437 5.6K
R439 4.7K
NR42
D403 GMA01
D404 GMA01

CONTROL IC LM 6402

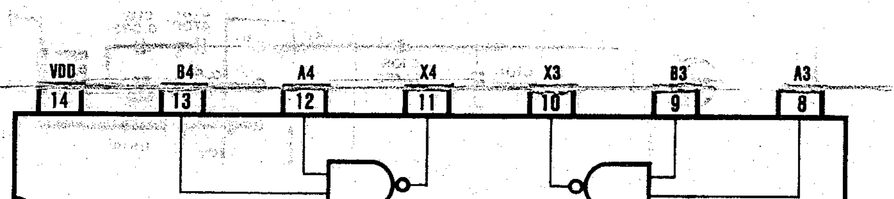
Fisher 3482

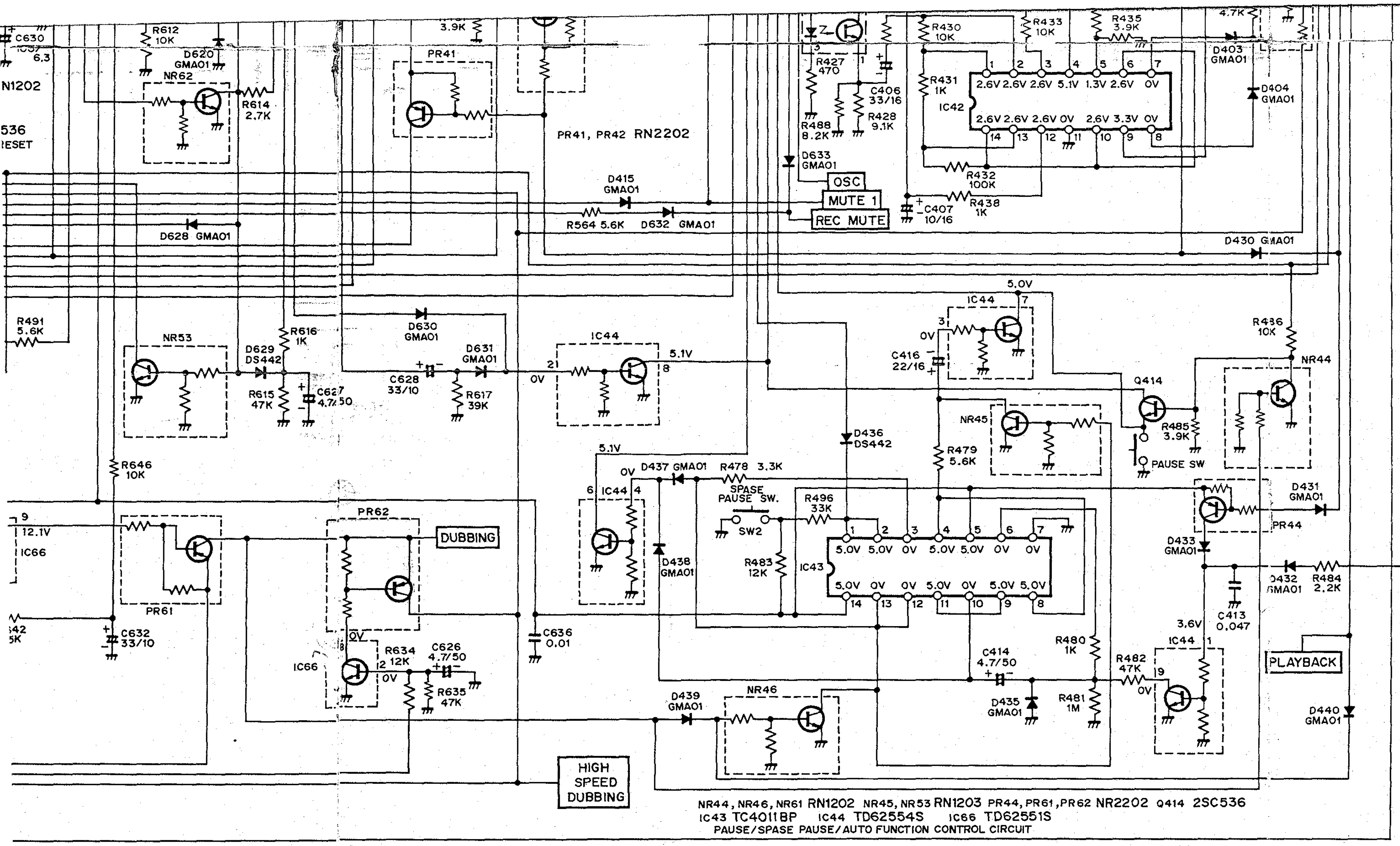

PI0-2
PORT I
PH0-3
PORT H
PG0-3
PORT G
PF0-3
PORT F
PLA0-7
PE0-3
PORT E
I/O BUFFER
PLA
RAM
OP COUNTER
ROM
AC
ALU
PC
STACK 1
STACK 2
STACK 3
STACK 4
TIMER COUNTER
INTERRUPT
PORT D
PORT C
PORT B
PORT A
PD0-3
PC0-3
PB0-3
PA0-3
INT
RES
Xtal
EXtal
VDD
Vss
LM6402
Xtal 1
PC0 2
PC1 3
PC2 4
PC3 5
INT 6
RES 7
PD0 8
PD1 9
PD2 10
PD3 11
PE0(PLA0) 12
PE1(PLA1) 13
PE2(PLA2) 14
PE3(PLA3) 15
PF0(PLA4) 16
PF1(PLA5) 17
PF2(PLA6) 18
PF3(PLA7) 19
TEST 20
(0V) Vss 21
42 EXtal
41 VDD(+5V)
40 PB3
39 PB2
38 PB1
37 PB0
36 PA3
35 PA2
34 PA1
33 PA0
32 PI2
31 PI1
30 PI0
29 PH3
28 PH2
27 PH1
26 PH0
25 PG3
24 PG2
23 PG1
22 PG0

QUICK REVERSE DETECTION IC LA 6324

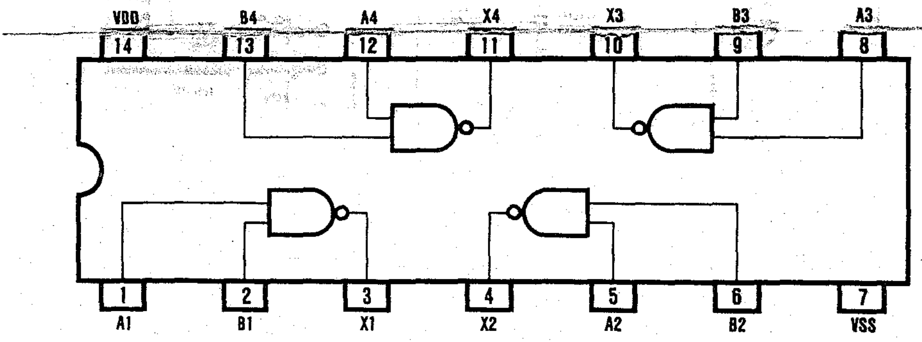

V+
INPUTS
Q01
Q02
Q03
Q04
Q05
Q06
Q07
Q08
Q09
Q10
Q11
Q12
Q13
Q14
Cc
R01
R02
OUTPUT
G

NAND GATE IC TC 4011 BP

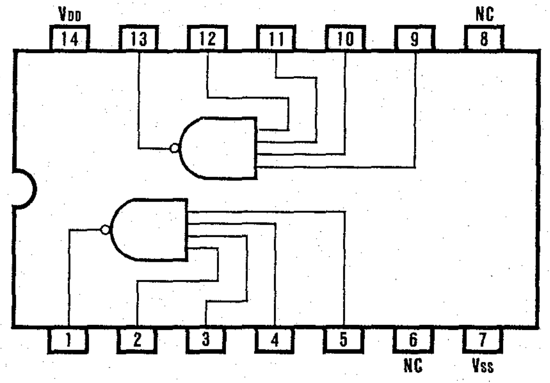

VDD
B4
A4
X4
X3
B3
A3
14
13
12
11
10
9
8

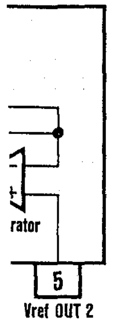

C630
6.3
R612
10K
D620
GMA01
NR62
R614
2.7K
N1202
536
RESET
3.9K
PR41
PR41, PR42 RN2202
R427
470
C406
33/16
R428
9.1K
R488
8.2K
D633
GMA01
OSC
MUTE 1
REC MUTE
C407
10/16
R438
1K
R432
100K
R430
10K
R431
1K
IC42
R433
10K
R435
3.9K
4.7K
D403
GMA01
D404
GMA01
2.6V 2.6V 2.6V 5.1V 1.3V 2.6V 0V
2.6V 2.6V 2.6V 0V 2.6V 3.3V 0V
D415
GMA01
R564 5.6K
D632 GMA01
D628 GMA01
D430 GMA01
R491
5.6K
NR53
D629
DS442
R616
1K
R615
47K
C627
4.7/50
D630
GMA01
C628
33/10
D631
GMA01
R617
39K
IC44
5.1V
0V
IC44
5.0V
C416
22/16
R436
10K
NR44
Q414
R485
3.9K
PAUSE SW
NR45
R479
5.6K
D436
DS442
R646
10K
5.1V
0V
D437 GMA01
R478 3.3K
SPASE PAUSE SW.
SW2
R496
33K
R483
12K
IC43
5.0V 5.0V 0V 5.0V 5.0V 0V 0V
5.0V 0V 0V 5.0V 0V 5.0V 5.0V
D438
GMA01
D431
GMA01
PR44
D433
GMA01
D432
GMA01
R484
2.2K
C413
0.047
12.1V
IC66
PR61
PR62
DUBBING
C632
33/10
C636
0.01
IC66
R634
12K
C626
4.7/50
R635
47K
3.6V
IC44
R480
1K
C414
4.7/50
R482
47K
D435
GMA01
R481
1M
PLAYBACK
D439
GMA01
NR46
D440
GMA01
HIGH SPEED DUBBING

NR44, NR46, NR61 RN1202 NR45, NR53 RN1203 PR44, PR61, PR62 NR2202 Q414 2SC536
IC43 TC4011BP IC44 TD62554S IC66 TD62551S
PAUSE/SPASE PAUSE/AUTO FUNCTION CONTROL CIRCUIT

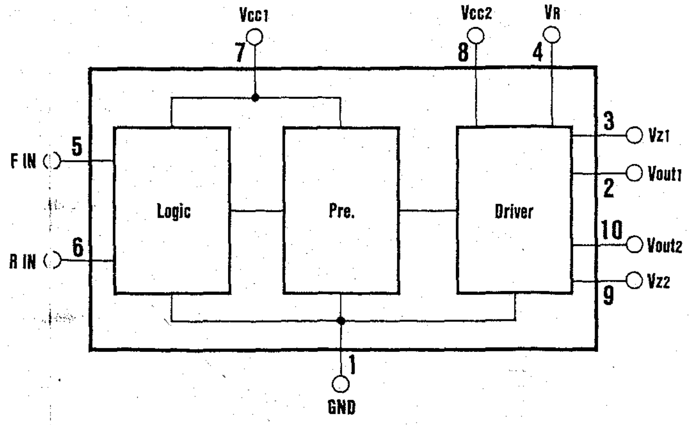

VDD
B4
A4
X4
X3
B3
A3
14
13
12
11
10
9
8
1
2
3
4
5
6
7
A1
B1
X1
X2
A2
B2
VSS

NAND GATE IC TC 4012 BP

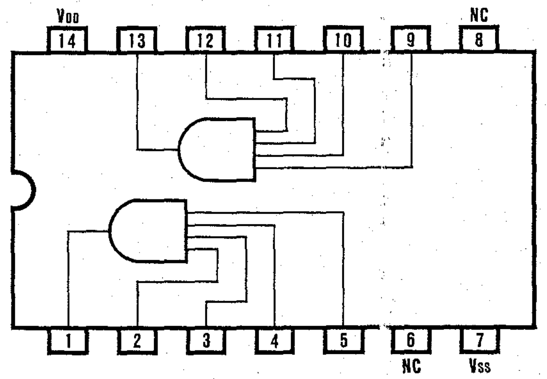

VDD
NC
14
13
12
11
10
9
8
1
2
3
4
5
6
7
NC
Vss


rator
5
Vref OUT 2

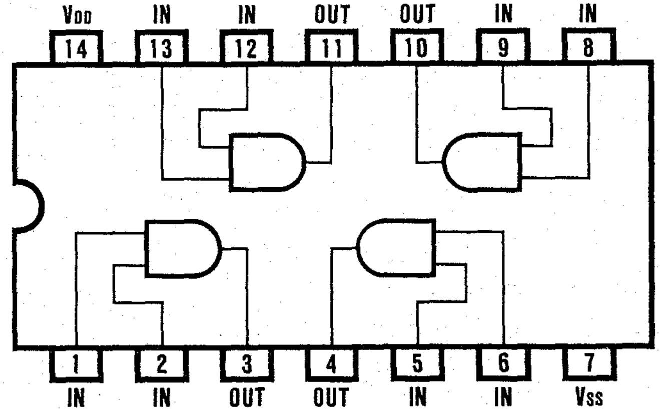
MOTOR CONTROL IC BA 6109


Vcc1
Vcc2
VR
7
8
4
F IN
5
R IN
6
Logic
Pre.
Driver
3
Vz1
2
Vout1
10
Vout2
9
Vz2
1
GND

AND GATE IC TC 4082 BP


VDD
NC
14
13
12
11
10
9
8
1
2
3
4
5
6
7
NC
Vss

AND GATE IC TC 4081 BP

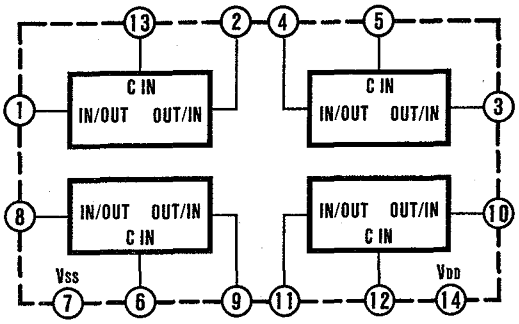

VDD
IN
IN
OUT
OUT
IN
IN
14
13
12
11
10
9
8
1
2
3
4
5
6
7
IN
IN
OUT
OUT
IN
IN
Vss

4

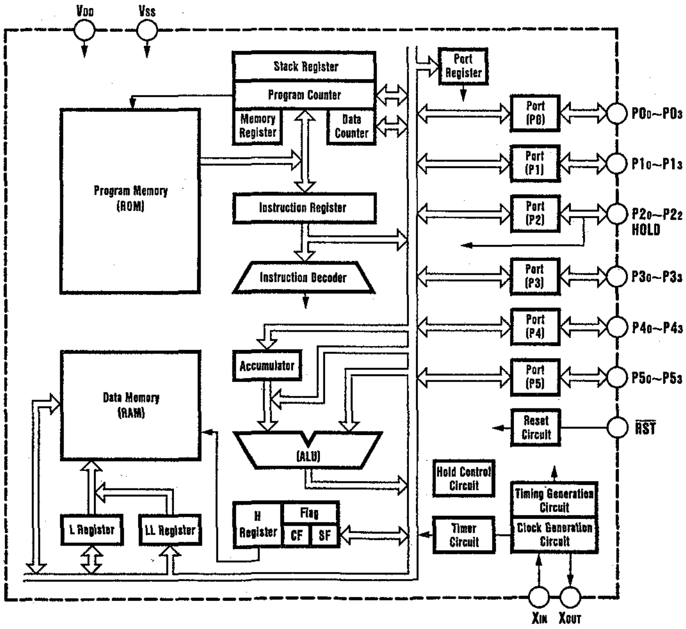
3482

IC BLOCK DIAGRAM
(FL METER / REMOTE CONTROL SECTION)

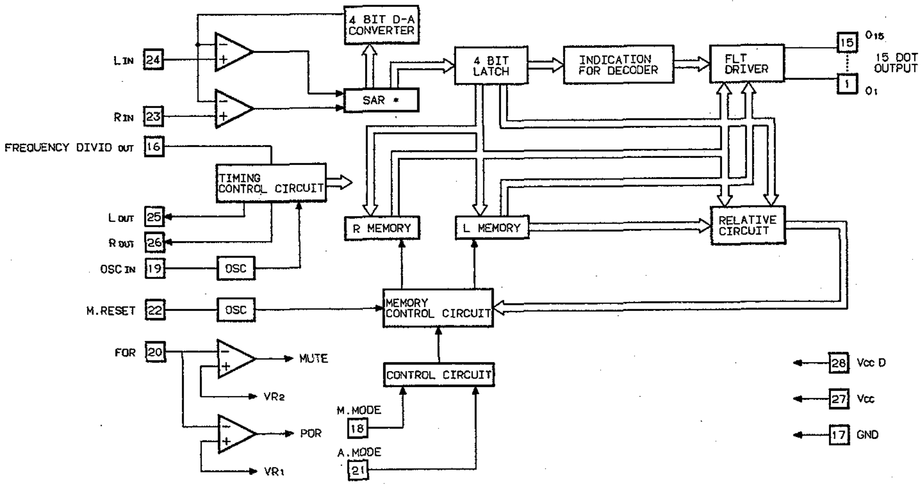
SWITCHING IC LC 4066 BH


13
2
4
5
C IN
IN/OUT OUT/IN
1
3
8
10
Vss
VDD
7
6
9
11
12
14

CONTROL IC TMP 4270 N


VDD
Vss
Stack Register
Program Counter
Memory Register
Data Counter
Port Register
Program Memory (ROM)
Instruction Register
Instruction Decoder
Port (P0)
Port (P1)
Port (P2)
Port (P3)
Port (P4)
Port (P5)
P00~P03
P10~P13
P20~P22
HOLD
P30~P33
P40~P43
P50~P53
Accumulator
Data Memory (RAM)
(ALU)
Reset Circuit
RST
Hold Control Circuit
Timing Generation Circuit
Clock Generation Circuit
Timer Circuit
L Register
LL Register
H Register
Flag
CF
SF
XIN
XOUT

LEVEL METER DRIVER IC MSL 9359 RS


4 BIT D-A CONVERTER
LIN 24
RIN 23
SAR *
4 BIT LATCH
INDICATION FOR DECODER
FLT DRIVER
15 O15
15 DOT OUTPUT
1 O1
FREQUENCY DIVID OUT 16
TIMING CONTROL CIRCUIT
LOUT 25
ROUT 26
OSC IN 19
OSC
R MEMORY
L MEMORY
RELATIVE CIRCUIT
M.RESET 22
OSC
MEMORY CONTROL CIRCUIT
FOR 20
MUTE
VR2
CONTROL CIRCUIT
M.MODE 18
POR
A.MODE 21
VR1
28 Vcc D
27 Vcc
17 GND